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Skilled Manpower Training
Research Committee
Report
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RESEARCH PROGRAM ON THE
TRAINING OF
SKILLED MANPOWER

No. 5

VOCATIONAL TRAINING PROGRAM
IN CANADA

D. - Vocational Training Needs
in Canadian Agriculture



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Department of Labour, Canada,
in co-operation with federal and
provincial government agencies and
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Canada, Interdepartmental Skilled Manpower Training
Research Committee.
Report.

Research Program on the
Training of Skilled Manpower

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VOCATIONAL TRAINING PROGRAM

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D. - VOCATIONAL TRAINING NEEDS IN
CANADIAN AGRICULTURE

Department of Labour, Canada,
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June 1962

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FOREWORD

This study of vocational training needs in agriculture has a two-fold purpose. Its first aim is to present an assessment of vocational training below the university level in agriculture, while the second is to offer proposals which may be used as a guide towards improvement in the future.

This report is the second on agricultural training. An earlier study, entitled Vocational Education in Agriculture; Publicly Operated, was completed in 1959 for the Skilled Manpower Training Research Committee by Mr. Newcombe N. Bentley, Principal of the School of Agriculture at Vermilion, Alberta. Mr. Bentley's report gave a comprehensive description of programs and facilities for vocational training in agriculture that were available in all provinces at the time his report was written.

There are about half a million farms in Canada at present but only about three thousand young people are enrolled in vocational agricultural courses in high schools and schools of agriculture. Among adults residing on farms, agricultural short courses reach only a relatively small proportion of the people.

The educational levels achieved by farm people have generally been lower than those of urban residents. The 1951 Census of Canada showed that only 26 per cent of all male and female farm residents who had left the formal school system had received nine years or more of schooling. By contrast, 51 per cent of both males and females resident in urban areas who had left schools had received the equivalent amount of schooling.

One of the most urgent problems is that a large number of students drop out before reaching high school level. For example, in a recent study of 352 representative Ontario farm families in 1959, it was found that 40 per cent of the boys who had left school and had entered the adult phase of their lives had not progressed beyond Grade VIII, or in other words had not reached high school.¹⁾ In addition to the fact that youths are not required to attend schools beyond the age of 15 or 16, in most provinces there are flexibilities in labour statutes which allow farm parents to keep children of 12 to 14 out of school, for periods up to six weeks in a school term, if their help is needed on the farm.

This study of agricultural training is based largely on an opinion survey conducted among groups and individuals who were either directly concerned with or interested in agricultural education. In July and August 1961 a survey team interviewed farmers, agriculture and education

1) Abell, H.C., Special Study of Ontario Farm Homes and Homemakers, Progress Report No. 6, Canada, Department of Agriculture, 1961, p. 9.

professionals, teachers and university professors, private grain company and farm machinery officials, and representatives of farm co-operatives and organizations. The survey team travelled to every province in Canada meeting with some 150 persons. These persons attended interviews and were given survey questionnaires which were completed on an individual basis. In addition, brief visits were made to Minneapolis, Minnesota and Farmingdale, New York, to enquire about the operations of vocational agricultural programs in these two areas of the United States. Appendix A describes the training given in these two areas, dealing with agricultural courses both at the high school and post-high school level.

At first glance, the detail of topics given in the Table of Contents may lead the reader to conclude that this is a fairly all-inclusive treatment of educational needs in vocational agriculture. Unfortunately, the study is limited in depth; partly because of the short time available for the survey, and also because the limited extent of training in this area at present provided a weak base or take-off point for such a study. There is no doubt, however, that important points and issues relating to both agricultural education and training for rural people in a somewhat broader context are raised in the report. In fact some of these points were given sufficient weight by a number of people interviewed to warrant separate topic mention, even though the process of following every type of training through to suitable orientation in the educational training scheme is not attempted.

This study, like that of Mr. Bentley's, was carried out for the Skilled Manpower Training Research Committee. Both the survey and the report were completed by Mr. Harald Tangjerd, Vocational Agricultural Instructor, Rosetown, Saskatchewan; Mr. Donald Buchanan, Economics and Research Branch, Department of Labour, Ottawa; and Mr. Stephen Vincent, Director of Information, Montreal Botanical Gardens, Montreal, Quebec. The manuscript was edited by Mr. R.A. Knowles.

J. P. Francis,
Director,
Economics and Research Branch,
Department of Labour, Ottawa.

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I INTRODUCTION

Studies Under the Skilled Manpower Training Research Program

This report is one of a series of training studies carried out under the Interdepartmental Skilled Manpower Training Research Program begun by the Federal Department of Labour in 1956 in co-operation with other interested federal and provincial departments and management and union organizations. The research program is under the general direction of the Interdepartmental Skilled Manpower Training Research Committee and its aims and objectives are set out in detail in Report No. 1 of this series, entitled "Progress Report", issued in June, 1957.

In May, 1960, the National Technical and Vocational Advisory Council set up a standing committee of three persons to make this study of the need for vocational education in agriculture. The work involved in carrying out a survey was later seconded to the Skilled Manpower Training Research Committee, which in turn set up an advisory sub-committee on agricultural training to get this study under way.

The members of the Advisory Sub-committee on Agricultural Training were the following:

Dr. T. H. Anstey,	Director, Research Station, Department of Agriculture, Lethbridge, Alberta.
Mr. R. F. Byron,	Director of Vocational Education, Department of Education, Edmonton, Alberta.
Mr. R. W. Carbert,	Director, Information Branch, Canadian Federation of Agriculture, Ottawa, Ontario.
Dr. D. W. Carr,	Carr and Associates, Consulting Economist, Ottawa, Ontario.
Mr. J. A. Doyle,	Director of Vocation Education and Regional Director, C.V.T., Department of Education, Regina, Saskatchewan.

Mr. J. A. Ferguson,	Ontario Federation of Agriculture, St. Thomas, Ontario.
Mr. J. P. Francis,	Director, Economics and Research Branch, Department of Labour, Ottawa, Ontario.
Mr. V. Gilchrist,	Economics Division, Department of Agriculture, Ottawa, Ontario.
Mr. F. M. Hereford,	Director, Special Services Branch, Department of Labour, Ottawa, Ontario.
Mr. D. L. Kirk,	Secretary-Treasurer, Canadian Federation of Agriculture, Ottawa, Ontario.
Mr. R. H. MacCuish,	Assistant Director, Vocational Training Branch, Department of Labour, Ottawa, Ontario.
Dr. J. R. Pelletier,	Scientific Liaison Officer, Research Branch, Department of Agriculture, Ottawa, Ontario.

Mr. J. P. Francis acted as chairman of the Sub-committee.

The Technical and Vocational Training Act of 1960

In December, 1960, an Act entitled the Technical and Vocational Training Assistance Act was passed by Parliament. The purpose of the Act is to provide financial assistance for the development and operation of technical and vocational facilities and programs throughout Canada.¹⁾

In addition to a great expansion in federal assistance for construction of new technical institutes, trade schools, technical and vocational high schools, the Act authorizes the Minister of Labour to enter into an agreement

1) See the Annual Report of the Department of Labour of Canada, March 31, 1961, p. 77.

with any province, for a period not exceeding six years, to make contributions to the provinces in respect of the costs incurred by them in undertaking a program of technical and vocational training.

Under the Act, the federal-provincial Technical and Vocational Training Agreement of April 1, 1961, provides federal assistance for nine training programs. These include training for: vocational high school students, technicians, trades and occupations, training in co-operation with industry, training for the unemployed, for disabled persons, technical and vocational teacher training, federal department and agency tradesmen and members or veterans of the armed services, and student aid for university students and nurses.

Concerning technical and vocational training in agriculture below the degree level, the three programs for assistance to vocational high school training, technician, and trade and occupational courses are the ones that would apply most directly in both formal and informal (short course) agricultural education. These are programs one, two and three of the federal-provincial training agreement. These are programs for students. For instructors, the new agreement also provides for technical and vocational training under program seven. Other training programs, such as training in co-operation with industry, training for the unemployed, disabled persons and student aid, do not necessarily exclude agricultural vocations but they are oriented more towards other industries and do not offer the same scope for agricultural training.

Following a greatly expanded program for vocational and technical training in all fields, federal and provincial governments approved the construction of more than 250 schools under the new legislation by March, 1962. These new schools were designed to accommodate 90,000 additional trainees.¹⁾ The significance and impact of these new facilities can be seen from the fact that there were only 179,000 full-time students enrolled in all publicly- and privately-sponsored trade, vocational, technical and apprenticeship courses in 1959-60.²⁾

However, there has been a tendency in some areas to integrate technical and vocational programs with urban needs. Although the rural population has been declining, there is a need to ensure that rural districts will be considered in the new emphasis being given to education and training. In so far as vocational training in agriculture is concerned, Table 1 indicates that government-sponsored education reaches only a small proportion of the farm labour force. Agricultural education in Canada appears to be very inadequate in scale when compared with enrolment in vocational programs

1) News release by the Federal Minister of Labour, March 5, 1962.

2) Survey of Vocational Education and Training, 1959-60, Dominion Bureau of Statistics, December 1961.

in the United States. In 1958, about 775,000 students were enrolled in federally-aided vocational agricultural programs in the latter country. This number was equal to 13 per cent of the United States farm labour force.¹⁾ In Minnesota, alone, there were nearly 28,000 students enrolled in the vocational agricultural high school program in 1960.²⁾

Table 1 - Enrolment in Publicly-Sponsored Technical and Vocational Agricultural Courses, Canada, 1959-60

	<u>Number of Persons</u>
Short courses	20,271 (a)
Diploma, one- to three-year courses	2,024
Other: farm, technical dairy, horticulture	250
Vocational and composite high schools	<u>413</u>
Total	22,958
Total labour force employed in agriculture, 1960	675,000 (b)
Number enrolled in courses as percentage of labour force	3%

- (a) Excluding study groups and club activities.
(b) Annual average for 12 months.

Source: Survey of Vocational Education and Training, Dominion Bureau of Statistics, 1961, Tables 1 and 12; DBS Labour Force Surveys; and Vocational Education in Agriculture, Department of Labour, Ottawa, 1959, p. 5.

Survey and Report Procedure

The advisory sub-committee on agricultural training suggested that programs in vocational agriculture in Canada and the United States should be studied to provide information which would help in assessing the training offered below the university degree level. At a meeting of the sub-committee in May, 1961, it was agreed that the work of the survey team should be limited to a study of training required to meet needs, rather than the means and

- 1) Statistical Abstract of the United States, 1960, pp. 133, 205.
2) See Appendix A.

facilities that would be needed to implement programs. In assessing needs, however, the sub-committee thought the survey team should consider structural trends in the agricultural industry which necessitate adjustments and changed requirements in the training of rural people.

The field work for this survey began on July 10 and was completed on August 29, 1961. The survey consisted of interviewing both individuals or groups, followed by the completion of field schedules on an individual basis. The field schedules were then mailed to Ottawa.¹⁾ Tables 2 and 3 give an analysis of the persons interviewed in Canada, and the percentage of survey forms which were completed and returned to Ottawa. The over-all response from 151 persons interviewed is reflected in the completion of 87 schedules, a return of about 58 per cent.

Although an attempt was made to obtain views and opinions in every province, the time at the disposal of the survey team limited the number of contacts that could be made in some of them. Thus, in the following analysis of field schedules received and opinions expressed, no attempt has been made to provide full details on training problems in every province. On the other hand, the study does identify the important needs in training that are common in most areas and merit more attention.

The following report contains an analysis of both individual field schedules and opinions expressed at interviews held in every province. Chapters II to IV attempt to set out an unbiased account of the opinions of people who were interviewed and who completed schedules, and Chapter V provides brief conclusions and proposals to meet some of the training needs, as set out by the writers of the report. Since the nature of the sample obviates statistical testing, a considerable amount of detail has been provided on the opinions of others to provide a basis for evaluation.

1) See Appendix B for specimen of the Interviewing Schedule.

Table 2 - Number of Persons Interviewed and Records Received

Province	<u>Types of Persons Interviewed</u>									
	Farmers		Agricultural Officers, etc.		Teachers and Professors		Others (a)		Total	
	I	C	I	C	I	C	I	C	I	C
British Columbia	-	-	2	1	7	4	1	-	10	5
Alberta	8	7	4	3	6	3	5	2	23	15
Saskatchewan	7	3	15	11	10	3	17	10	49	27
Manitoba	2	-	8	1	3	1	9	5	22	7
Ontario	1	-	3	-	4	5	-	-	8	5
Quebec	-	-	10	10	7	1	4	2	21	13
New Brunswick	-	-	1	1	-	-	-	-	1	1
Nova Scotia	1	1	2	2	1	1	1	1	5	5
P.E.I.	-	-	6	6	1	1	-	-	7	7
Newfoundland	-	-	5	2	-	-	-	-	5	2
Total	19	11	56	37	39	19	37	20	151	87

(a) Other persons include those from private companies, farm organizations, and in most provinces one or more persons from provincial departments of education.

Note: I Columns show the number of persons interviewed and given a form to fill out.

C Columns show the number of completed survey forms mailed to Ottawa.

Table 3 - Analysis of Types of Persons Interviewed by Percentage Completing Survey Forms

	<u>Per Cent</u>
Farmers	58
Agricultural officers	66
Teachers and professors	49
Others	<u>54</u>
Total	58

Acknowledgement of Assistance

The people interviewed by the survey team were very co-operative. In spite of the fact that the survey was held at a time when departmental officials were short of staff due to coincidence of summer holidays, the team was well received everywhere. The assistance of provincial officers of agriculture and education departments in organizing group meetings is gratefully acknowledged.

Special mention should be made of the car transportation provided in different areas by provincial departments co-operating in the survey. In the United States, the survey team was also provided with some transportation, and the professors who were interviewed co-operated in every possible manner, even to the extent of arranging meetings after normal working hours.

In Quebec, the Agricultural Education Committee operating under the auspices of the present Royal Commission on Education in the Province, provided the survey team with briefs received by the Committee and a copy of their own report to the Commission.

Acknowledgement is also made to those members of the National Technical and Vocational Training Advisory Council and of the Sub-committee on Agricultural Training who gave helpful advice in the preparation of the field survey and of this report.

II TRENDS IN AGRICULTURE AND THEIR IMPLICATIONS IN TRAINING

Farm People and Trends in Farming

The educational requirements of a trade or occupation are greatly influenced by technological change. Since the Industrial Revolution the introduction of each significant technological change in industry has necessitated higher standards of education for workers generally. Unfortunately, the agricultural worker has, almost invariably, been among the last sectors of the working population to benefit from resulting improvements in educational standards.

It must be kept in mind that the composition of the farm labour force differs greatly from that of the non-agricultural industries. The farm labour force still consists of many small family enterprises. In 1961, the number of unpaid workers on farms, without including farm operators, accounted for 70 per cent of unpaid workers employed in all industries. The number of self-employed farm operators also bulks large in comparison with the number of independent self-employed workers in other industries. In 1961, farmers accounted for about 45 per cent of all workers classed as 'own accounts' and employers in the labour force.¹⁾

The independence and diversity of the many small enterprises in agriculture affect the nature and characteristics of farm people, creating the need for a very different approach to training and education than that followed for other groups of people. The difference in the social nature of farm people, stemming from their occupation and environment, is probably one of those things that is so obvious that little attention has been paid to it in planning educational programs. Yet the fact that farm groups have been among the last to benefit from improvements in educational standards, in this country as in others, is probably closely related to this factor.

Because of their position as operators of private business enterprises, many farmers are aware of and concerned about the exodus of farm people to urban-centred industry and the changing base for rural taxation, plus changes required in providing social services in communities experiencing decreases in population. Farm people are also aware of the increased scale of farm businesses along with increased mechanization and the tendency toward more specialized farm production. Farm parents appear also to be increasingly aware that their children should have sufficient education to avail themselves of greater opportunities. In the face of continuing exodus from farms, many parents are convinced that, because all their children cannot establish themselves in agriculture, they must have more opportunity to derive a living from other occupations of their choice.

1) Yearly averages, DBS Labour Force Surveys.

Except for a more thorough analysis of employment, no attempt will be made to quantify the dimensions of the entire range of trends in the agricultural industry in this report. Census data and other surveys show that the size of farms is increasing, particularly in the Prairie Provinces; while in other areas the scale of the farm business is generally being increased, either by means of increased physical size, or by an increase in the intensity of operation. Although the different types of farming carried out in each province remain basically of the same pattern as they were fifteen or twenty years ago, there is a general trend towards specialization by individual farmers. Along with increased specialization, farming is becoming much more technical. New scientific methods are being introduced rapidly. There is now an increasing recognition that farmers need training beyond the practical physical skills required to operate machinery and to care for livestock. With a tendency for a greatly reduced number of operators to produce farm products under constantly improving conditions of efficiency, the individual farmer needs to be on the lookout for technological developments that will improve his competitive position. Due to the greatly increased commercialization and heavier capital requirements of farm businesses, the recognition of training needs is being focussed primarily on the management skills required to operate a farm business successfully.

Employment in Agriculture and Other Renewable Resource Industries

In considering education programs for farm people, the continuing exodus from farms to urban areas indicates that those responsible for the administration of education should be re-appraising needs more frequently. In the fifteen-year period between 1946 and 1961, employment in the agricultural labour force in Canada dropped from 1,186,000 to 673,000, or by 43 per cent.¹⁾ The decline in the number working on farms has resulted partly from a decline in the farm population, and partly from an increase in the number of farm residents who have found off-farm employment. In 1958 it was estimated that about 29 per cent of the farm residents 14 years of age and over worked in non-farm industries.²⁾ In mid-winter each year, when farm employment reaches its seasonal minimum, the proportion of labour force age farm residents with off-farm jobs may be nearly 40 per cent of the total.³⁾ Despite seasonal factors and the above decline, however, the farm labour force still represents about 10 per cent of the total labour force.

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- 1) Annual averages, DBS Labour Force Surveys.
 - 2) Trends in the Agricultural Labour Force in Canada, Department of Labour, Ottawa, 1960, p. 46.
 - 3) In February, 1958, 37 per cent of all Canadian farm residents 14 years of age and over had off-farm jobs, according to special tabulations made by DBS Labour Force Surveys.

While the decline in the farm population and labour force has been occurring in all provinces, there are still different proportions of farm to non-farm workers and fairly wide differences in the size of farm families in different provinces. Trends within smaller areas have probably differed even more widely. In reasonably prosperous agricultural areas, the exodus of marginal operators and their families may have improved the opportunities of those who remain. In depressed areas, on the other hand, the mobility of farm labour may have been too low to enable a better allocation of human and agricultural resources to take place.¹⁾

Table 4 sets out the recent trends in employment in both primary farming and secondary agricultural industries and the five labour force regions in comparison with employment in forestry, fishing and trapping industries. It will be noted that, although employment in primary agriculture declined rapidly from 1,077,000 to 692,000, or by 36 per cent, between 1949 and 1959, employment in the manufacturing of agricultural products has been growing slightly and still rivals employment in the important forest product industries.

Within the five labour force regions, the Prairie Provinces still accounted for 41 per cent of total primary agricultural (or farm employment) in 1959, while employment in the manufacturing of agricultural products was concentrated heavily in Ontario and Quebec.

These statistics indicate, in so far as training is concerned, that Ontario and Quebec require far more skilled workers in secondary agricultural industries than any of the other provinces.²⁾

1) See, Haythorne, G.V., Labor in Canadian Agriculture, Harvard University Press, 1960, p. 97.

2) Employment in secondary industries in Table 4 is understated to some extent because it is impossible to allocate the origin of employment for a number of manufactured goods that have a mixed product content. See, Dymond, W.R., Employment and Income in Renewable Resource Industries, paper to be published in proceedings of Resources for Tomorrow Conference, Montreal, October 1961.

Table 4 - Employment in Primary and Secondary Renewable Resource Industries in Relation to Total Employment, in Canada and the Five Labour Force Regions, 1949 and 1959

Year	Popula- tion	Labour Force	Total Employ- ment	Primary Resource Employment			Manufacturing Employment Originating from:					Total Primary plus Secondary	Per Cent of Total Employ- ment
				Agric.	Forestry	Fishing and Trapping	Sub- Total	Canadian Farm(a)	Forest	Fishing	Trapping		
(annual averages in thousands of persons)													
Canada	13,447	5,083	4,913(b)	1,077	69	26	1,172	248	256	12	8	524	35
1949	17,442	6,228	5,855	692	94	15	801	256	288	13	5	562	23
Atlantic	1,576	455	429	83	16	18	117	12	27	8	0	47	38
1949	1,857	553	493	56	25	8	89	10	20	9	0	39	26
Quebec	3,882	1,423	1,369	242	27	2	271	106	79	1	4	190	34
1949	4,999	1,752	1,613	154	32	1	187	92	88	1	3	184	23
Ontario	4,378	1,815	1,766	283	14	2	299	95	87	0	3	185	27
1949	5,952	2,290	2,187	174	13	1	188	109	104	0	1	214	18
Prairies	2,474	953	929	432	1	1	434	24	16	0	1	41	51
1949	3,030	1,071	1,036	284	2	2	288	31	21	0	1	53	33
British Columbia(c)	1,137	437	420	37	11	3	51	11	47	3	0	61	27
1949	1,604	562	526	24	22	3	49	14	55	3	0	72	23

Source: Dominion Bureau of Statistics Labour Force Surveys and DBS Manufacturing Industries of Canada.

(a) Excludes about 58,000 engaged in manufacturing imported farm produce.

(b) Excludes Newfoundland.

(c) British Columbia includes Yukon and Northwest Territories.

0 Less than one thousand.

Kinds of Knowledge and Skills Becoming More Important

In the face of these changes which have taken place--some of which have developed very quickly--it is evident that certain techniques and classes of knowledge have increased in importance; others should be developed so as to enable farmers and other agricultural workers to achieve the best results in their occupation.

Question 2 of the interviewing questionnaire asked survey respondents to indicate the kinds of knowledge and skills which are becoming more important to farm youths and adults. Answers were made by placing check marks opposite a list of farm production and management subjects. Tabulations of the skills and training thought to be important by respondents produced some rather interesting results (Table 5).

Speaking generally for all ages, i.e., of boys, girls, men and women, respondents rated different types of training as important in the following order: rural sociology, marketing, farm management, agricultural engineering, animal husbandry, crop production, household science and soils. Taken separately, training for the two sexes and for youths and adults was rated as most important in the following order:

For boys--farm management, followed by rural sociology, animal husbandry, agricultural engineering, soils, marketing, crop production and household science.¹⁾

For girls--household science, then rural sociology, farm management, marketing, animal husbandry, crop production, agricultural engineering and soils.

For men--farm management, followed by animal husbandry, agricultural engineering, rural sociology, crop production, marketing, soils and household science.

For women--farm management, then household science, rural sociology, marketing, animal husbandry, crop production, agricultural engineering and soils.

In addition to the foregoing rating of different types of training classified separately for boys, girls, or men and women, it should be noted that, when respondents were asked to classify training as important, the actual score totals for each type of training for boys and men were fairly equal, as are those for girls and women. On the other hand, when respondents were asked to classify training as most important, they placed

1) The order of these was derived by totalling the three sub-groups shown under each underlined item in Table 5.

Table 5 - Kinds of Agricultural Knowledge and Skills which are Becoming Important in Canada, for Boys and Girls, Men and Women

Item	Number checked ^(a) as becoming							
	Important for:				Most important for:			
	Boys	Girls	Men	Women	Boys	Girls	Men	Women
<u>Rural Sociology</u>								
Knowledge of community.....	40	41	34	41	9	7	17	12
Rural leadership.....	40	56	35	38	35	20	37	25
Recreation.....	33	32	24	28	11	12	9	5
<u>Farm Management</u>								
Business organization.....	29	26	17	26	38	18	61	35
Farm operation.....	39	27	27	29	20	6	37	10
Use of capital.....	26	21	21	27	31	15	53	23
<u>Crop Production</u>								
Choice of crops.....	37	14	36	12	11	1	21	1
Production techniques.....	39	10	32	11	18	6	33	7
Storage on farms.....	16	3	28	9	4	1	9	1
<u>Animal Husbandry</u>								
Breeding.....	39	11	40	12	12	4	19	5
Feeding.....	46	16	37	13	19	4	33	6
Prevention and control of disease.....	36	10	38	13	16	3	23	4
<u>Agricultural Engineering</u>								
Buildings.....	38	16	37	20	9	1	20	2
Machinery.....	39	6	42	8	23	2	25	3
Equipment.....	40	15	39	18	11	2	19	3
<u>Soils</u>								
Land use.....	37	14	28	13	20	4	36	5
Drainage.....	19	5	25	4	11	1	13	-
Irrigation.....	23	6	31	6	6	-	6	-
<u>Marketing</u>								
Marketing services.....	43	23	35	22	18	9	35	13
Storage and transportation.	31	11	37	10	6	1	9	1
Processing products for market.....	34	17	36	22	11	3	18	5
<u>Home Economics</u>								
Cooking.....	2	27	4	28	-	15	-	17
Sewing.....	1	34	3	37	-	7	1	7
Home management.....	15	32	21	29	3	31	4	35
<u>First Aid</u>	44	45	43	45	6	8	6	8

(a) The 87 respondents to the survey scored an item as important with a single check, or most important with a double check.

considerably greater emphasis on training for men rather than for boys, and also for women rather than for girls. It would seem from this that respondents to the survey sensed a real and immediate urgency for training adults who are now operating or working on farms.

In addition to requirements for agricultural knowledge, it will be noted in Table 5 that first-aid training was stressed as important for boys, girls, men and women alike.

Although the interviewing questionnaire did not provide for comments on question 2, when the survey team met with groups across Canada, the survey form was used as a basis of discussion and fairly extensive notes were made on all sections of the questionnaire. These notes made it possible to provide the qualitative comments on different types of knowledge and skills which are set out below in the order shown in Table 5.

Rural Sociology and Leadership

The inhabitant of rural areas must first know and understand his physical, economic and social environment. It is important for him to be informed about the potentialities of his area, the people who live in it, the relations which exist between them, their problems and the issues which bring them together or draw them apart. He should know the constitution and organization of civic bodies, religious institutions, and the services they render to the community. Among other interests, he or she should combine a suitable proportion of recreation. A number of persons interviewed pointed out that recreation centres should be established in the country as well as in the city.

Above all, rural people must be informed about agricultural institutions and associations of their area. They must know why they exist and how they operate. They must also familiarize themselves with industries that are directly or indirectly associated with agriculture and with the various services they render.

If people engaged in farming are to progress and solve their problems, they will need properly trained leaders who possess a sound basic education and are well-versed in their trades. In their professional associations and elsewhere leaders should learn to speak in public, to discuss, to think and criticize constructively, to understand the different points of view, to settle arguments satisfactorily and accept responsibility for other things required of a person acting as a guide and leader.

Farm Management

Since farming is becoming a truly financial enterprise in which considerable capital has been invested, it is very important to give special attention to the management of the farm as this is the basis of success or failure. The farmer must:

- a) make a wise choice of his specialty or specialties
Before undertaking any activity, he must ensure that he is sufficiently prepared to do so. He also must decide if the weather, soil, market conditions, etc., favour the undertaking
- b) co-ordinate the needs of his specialties in the best way possible It would not be wise for him to select two specialties that do not thrive together and which would call for a duplication of investment or work obligations at inconvenient times
- c) choose the most efficient techniques or the best use of production factors for every task to be done He must attempt to economize in time and work, and try to use machines at full capacity
- d) make wise use of long- and short-term credit A number of survey respondents, particularly company officials, mentioned that the farmer does not make very good use of the easy credit offered him
- e) be able to adjust himself, as well as his whole undertaking, to changing conditions
- f) be able to decide how to invest his money to earn the highest available profits.

To meet the foregoing requirements it is clear that the farmer must keep detailed accounts from day to day. More important, he must be able to analyze the data. He must ascertain profitable enterprises and the causes of losses in others.

New trends in training farm management specialists and establishing private firms of advisors in supervision, management and analysis, herald the beginning of a new period in the economics of agriculture. The hiring of farm managers by a gradually increasing number of farm owners is another indication of the growing importance of farm management.

Crop Production

Most of the persons interviewed expressed the opinion that there is less urgency for training in this area since, until recently, people have been so preoccupied with production that most farmers are reasonably up to date in crop production techniques. They believe that it is now important to put the emphasis on farm management, mechanical equipment and marketing.

However, some of the persons interviewed thought that crop production still needs emphasis and that something could be done to improve yields, resistance to diseases, etc. They believed that the present techniques can be improved further or, at least, that we should not cease to provide training in this area and that it is necessary to carry out research work to find better methods.

Some people also pointed out that farmers and agriculturists should be better informed in the various ways of processing plant products so as to meet market demand, find new outlets and make better profits.

Animal Husbandry

As in the case of crop production, there seemed to be a considerable lack of interest in this field because emphasis has, for a long time, been put on production.

Some people, of course, still expressed the opinion that farmers should continue to adopt the best methods of breeding and feeding available, in order to achieve minimum costs.

The present trends in assembly line production and automation, artificial insemination, automatic feeding, shorter work-days, etc., make it necessary for farmers to keep up to date. Training will assist him in doing so.

Agricultural Engineering

This is one of the areas, particularly farm mechanization, where changes have been most evident, and where increasing amounts of capital have been required. Farm buildings, farm implements and the equipment necessary for the operation of a farm must be in reasonable proportion to their economic importance. Innovations such as the loose housing of cattle, feed lots, rotary and automatic feeders, 'Harvest Store' silos, bulk milk tanks, new hay presses and irrigation equipment, etc., produce special problems to which the farmer must quickly adjust.

Since the farmer does not always have the necessary performance data, he requires more up-to-date information. He must also have some knowledge, even if only elementary, of carpentry, electricity, plumbing and welding, so as not to have to call on the services of a tradesman every time he has a minor maintenance or repair problem. The need for knowledge of things mechanical is particularly urgent, especially in eastern Canada. The farmer must know how to adjust, operate and maintain his farm implements.

Soils

It seems there is still much to do in the manner of training before the farmers will know soils better and how to use them in the most rational way. Soil classifications have been made in a number of provinces, but in the others they are not yet completed. It is important to determine what kind of farming our various soils are best suited for. Since soil, however, is only one of the physical and economic factors, certain provinces--especially Quebec--are interested in land-use classifications which would take economic, soil and climatic factors into account.

A large number of the persons interviewed considered that farmers still require training in maintaining the organic nature of their soils. They also require more knowledge of soil drainage and irrigation.

Marketing

Quite a number of the people interviewed rated a knowledge of marketing as important (see Table 5). Although, collectively, farmers can and have organized co-operative ventures and marketing boards to strengthen their position in the marketing of farm products, as individuals, it was suggested that farm people could do a great deal more of the processing of farm products, particularly of vegetables such as potatoes and tomatoes. They would need some technical training to accomplish this.

Several of the persons interviewed suggested that farm people should be given courses in marketing in an adult education program, perhaps in high schools, where a greater mass of people could be reached.

Home Economics

Until the present time the training required by a farm woman has been neglected. All too often she has been given a program designed for urban centres and her activities have been too highly concentrated on the arts of cooking and sewing.

The farmer's wife must know her husband's work to understand him. She should help her husband with his bookkeeping and analysis of data. This is a very important job. If the farm is to become an undertaking where husband and wife are closely associated in management, the farm wife must have the knowledge that will enable her to play her part.

In the opinion of quite a number of persons interviewed, home management is just as important as farm management. It is, in fact, impossible to separate one from the other.

As women control the bulk of the purchasing power in the current necessities of life, it is important that they learn to restrain spontaneous spur-of-the-moment purchases and concentrate instead on real values and necessities. Women must know what to buy and where and when to buy it. Sound economic principles are just as valid and sensible on the farm as in the city. There is no doubt that training and vocational guidance would yield good results where farm women are concerned.

Specialized Needs in Agriculture and Agricultural Industries

Although not many of those completing survey questionnaires mentioned the need for specialized training in fields allied to agriculture, those who did stress this need included interesting lists of some of the specialties in which there is an increasing demand for technically-trained men. Geographically, the demand for services in different fields may vary somewhat, due to the differences in types of farming and secondary agriculturally-oriented industries. This is apparent in the following list of specialized occupations which was provided by persons from four different provinces:

- a) In British Columbia, there is an existing need for diploma courses in orchard management, landscape gardening, turf management, food technology, dairy farming and beef cattle management.
- b) In Alberta, there is a need for vocational training for grain buyers, weed inspectors, feed plant personnel, seed company employees, produce and meat inspectors, artificial inseminators, farm machinery blockmen, mechanics servicing farm machinery, landscaping workers, golf course and park employees.

- c) In Ontario, in addition to the type of third-year course in agricultural mechanics at Kemptville Agricultural School, there is a need for a third-year school of agriculture course in the grain elevator field. This would include additional work in soils, crops, fertilizers, feed and nutrition. There is also a need for a third-year course in farm management.
- d) In Quebec, there is a need for horticultural specialists in budding, grafting, storage and grading work. There is a need for special training for clerks and butchers who work in large food supermarkets. There is also a need for agricultural research technicians to assist professional agriculturists.

The persons who supplied the above lists stated that these are not necessarily a complete listing of the specialized service requirements in agriculture, but that they were intended to emphasize the growing need for more specialized training.

III PRESENT TRAINING PROGRAMS--EFFECTIVENESS, LIMITATIONS, RECOMMENDATIONS

General Assessment

In the interview questionnaire, respondents were asked to indicate the types of training programs they thought met needs most effectively in their area or province. Due to the relatively small sample of persons responding to the survey, an over-all summary of tabulations of all records is shown in Table 6. Since most of the programs shown are common to every province, and since they are the chief ones available so far as training for rural people is concerned, the table does present a useful assessment of the survey respondents' opinions.

In the table, academic high school programs are listed separately from vocational agricultural programs which may be given in high schools. By setting up the survey questionnaire for a separate evaluation of the academic high school course, we were able to get an assessment of the usefulness of a general high school education to farm people. The remainder of the programs listed refer more to agricultural training, although very often some non-agricultural training may be provided in club work and short courses.

In Table 6, it may be seen that respondents felt that 4-H Club, school of agriculture and high school programs met the needs of young people most effectively; although high school programs were rated as effective for general training only. For adults, it was felt that short courses were most effective, followed by homemaker clubs, farm management clubs and school of agriculture training. It should be noted here that farm management was not included in the list of programs on the survey questionnaire but was added to the list by respondents themselves. If it had been included, it is quite possible that a greater number of respondents might have checked this as being effective.

As for vocational agricultural programs, the smaller number of respondents recommending these stems partly from the fact that very few areas have these programs available at present.

It is interesting that the only two programs which were highly scored as effective for all general, special and practical needs were 4-H clubs for young people and short courses for adults. Schools of agriculture for young people came close to these higher ratings but, while being scored very highly for general needs, not as many respondents thought that they met practical needs effectively.

Table 6 - Kinds of Present Training Programs which Meet Needs Most Effectively in Canada

	4-H Clubs	Junior Farmers' Clubs	High School	Vocational Agric. in High School	School of Agric.	Correspondence Courses	Short Courses	Farm Management Clubs	Homemakers & Women's Institutes
(Number of respondents recommending programs)									
<u>Effective for general needs</u>									
For young people.....	54	18	41	13	59	10	22	1	16
For adults.....	7	-	3	3	17	5	42	12	30
<u>Effective for special needs</u>									
For young people.....	34	8	8	7	34	3	19	1	12
For adults.....	3	-	2	2	11	4	54	14	15
<u>Effective for practical needs</u>									
For young people.....	42	6	8	9	29	2	19	1	14
For adults.....	4	-	1	2	12	4	42	15	26

Note: In addition to programs listed in this Table, a few persons recommended non-agricultural vocational training in technical schools for both young people and adults, and a few people recommended folk school agricultural courses for adults.

A series of qualitative opinions on the effectiveness, limitations and recommendations for each type of program proposed by survey respondents are included in the following analysis:

Programs for Young People

4-H Clubs

Effectiveness: There are a large number of these clubs and few boys and girls do not have the opportunity to belong.

The material, usually taught by first-class farmers and homemakers, is very practical and directly related to the project.

The quite recent increase in citizenship training is commendable. The following are some of the respondents' comments on 4-H training:

They are doing a good job of training both for projects and leadership.

Many of our better farmers were 4-H members. Many of our Nova Scotia agricultural graduates were 4-H members.

They stimulate interest of both club members and parents.

Club members learn to take their place in the community, whether rural or urban.

The members learn by actually working with a specific project.

Limitations: It is difficult to establish a suitable 4-H orchard project.

The clubs are practically useless in development of knowledge and skills, but effective in development of interest and appreciation.

Farmers, acting as teachers, are unskilled in how to impart information.

There is only one program in each club. In the United States different projects can be found within a given club.

Members drop out too soon. The average age of those remaining, at 13 to 14, is too young to create many lasting impressions. Senior members would get more out of it.

In some sections the numbers of 4-H clubs are limited by lack of sufficient personnel to supervise them, and by lack of parent interest.

Recommendations: Participation in 4-H clubs was generally a popular recommendation of most persons interviewed. The clubs have done a great deal in stimulating both boys and girls toward more self-reliance and a greater interest in their communities, in agricultural organizations, church programs and community leadership. The 4-H clubs, of course, also promote an interest in better farming, although some persons stated that boys and girls would profit by 4-H Club training whether they chose to remain on farms or decided to leave. One person stated, "Children should be strongly urged to join 4-H clubs." In general, people thought that the fullest use should be made of 4-H activities and that more of these clubs should be developed.

To improve 4-H activities some people suggested the most important step would be to improve the quality of club leadership given by adults. Others expressed the opinion that an easing of the rigid project ruling would be an improvement. For example, under present arrangements in some areas a given club might be growing crops for ten years. It was suggested that clubs should alternate their projects and perhaps study insect control one year, soils the next, etc.

Junior Farm Clubs

Effectiveness: They are important for youths who have left school but have not yet become established in farming.

They are effective when good leadership is available.

Limitations: Junior Farm clubs are not nearly as widespread as 4-H clubs.

One of the weaknesses is the difficulty of maintaining good leadership, as leaders find the work very time-consuming.

The clubs must compete with many other interests for young people.

The clubs have not been popular in Manitoba.

Recommendations: One person suggested there should be a continuing program for the group of young people who graduate from or leave 4-H Club work. One of the agricultural representatives interviewed felt that junior farm clubs for young farm people up to 30 years of age should be established in his area in British Columbia, but he thought that the program would require a full-time promoter. Another person thought that a gap existed in the provision of training programs at this age. The farm parents take short courses but the young people are not interested. Junior farm clubs can help to bridge the gap between 4-H and senior farm organizations.

Academic High School

Effectiveness: The high school can provide the student with a sound general training; it provides the ability to read, write and speak intelligently. This education should be a sound base for additional education. For example, a farmer with a secondary education is much better equipped to handle the information available to him than one with less education.

High schools reach more of the population than any of the other programs mentioned.

A high school education is most important for youth today, as it forms the basis for most further learning, regardless of the vocation followed. Proof of its effectiveness is the fact that most skilled employment opportunities require a high school education. One respondent from Quebec stated that farm boys need more high school education. At present they are badly prepared for the schools of agriculture.

Limitations: High schools are purely academic. Bright students are diverted into professional careers and dull students receive little benefit.

Too few farm boys complete high school; this may be due to lack of desire or lack of ability to cope with present courses.

Only limited counselling or guidance has been available. High schools are unable to attract the persons needing the training into the courses being offered and do not attract the best students into agriculture.

Recommendations: A few persons thought that too much time in school was spent in what they felt were 'educational frills'. One person included social studies as being one of the superfluous frill subjects. These persons believed that elementary and secondary schools should emphasize a basic training in reading, writing and mathematics. The time allotted for the present-day curriculum was too limited to allow for extra subjects and any additional subjects should fit into the basic educational program.

Other people, however, held the opinion that young school children require a broad type of education. A few suggested that children should be introduced to nature and elementary agricultural studies even at the Grade IV and V age. Their studies should include the growth of animals and plants, insects, etc. One felt that children should have clearly defined courses in civics available to them and, as we shall see in Chapter IV of this study, some people felt that social studies were an important part of the school curriculum.

Twelve of the persons who completed survey forms insisted that the academic course should be completed in high school. Some were of the opinion that a farm operator requires the full high school academic education plus agricultural training, such as that provided by schools of agriculture, after graduation from high school. There seemed to be agreement that to become a successful farm operator today, a boy must have the mental capacity for a high school education and should take it.

Among those who emphasized academic courses at high school, however, there were several persons who recognized that not all young people can meet the academic requirements, while other youths do not wish to do so. These young people should have access to vocational or technical training.

In addition to those people who gave priority to a high school education, there were some who mentioned the need for educational facilities to upgrade the academic qualifications of rural youth. In Manitoba, there are plans to begin a winter course in a farming area, offering mathematics, science and English classes to people about 17 years of age who have been out of school for at least one year. It was hoped that these young people could be upgraded from about the Grade IX or X level to Grade XII. The training would be intended to qualify people for vocational courses.

Vocational Agriculture in High School

It is necessary to make a clear distinction between vocational and orientation courses or enriched courses at this point. Perhaps the most specific distinction that can be made is to define vocational training as training which prepares a person for his regular occupation. In the case of vocational training for agriculture, it would mean training to run a farm or to specialize in agricultural services. The options in agricultural science in Ontario high schools are not vocational in this definitional sense. One person interviewed in Ontario stated that, although he favoured the agricultural science option, he would be against a complete vocational training course in high school because teachers cannot keep pace with the rapid changes in farming methods. Moreover, the training might be out of date by the time the student was ready to apply it on his own farm.

Effectiveness: When well taught it has provided excellent training. The project work has been very successful and the farm mechanics program is attractive. The type of experience gained in the management of a farm project is of importance in the life of every student.

While some high school subjects stress theory and others stress practical work, the vocational agriculture program provides an integration of both theory and practice. This program must be expanded to meet needs.

The program can cater to the needs of three groups--high school students, out of school youth, and adults. Our high schools become more truly 'community schools' when instructors also give classes to adult farmers. In such a program farm management could be an important class for adults.

The vocational agriculture program can reach a large number of students. It should also hold boys, who are going to farm, in the high school. Many vocational agriculture students succeeded in graduating from high school because they were in their own field of interest. This gave them confidence and success in their other subjects.

The students obtain their agricultural training in their own community. Classroom learning is transferred directly to farm operation under the supervision of a locally employed instructor. Because the work of the vocational agricultural instructor takes him to the farms, he gets to know the student, the family and the farm, and can be of help in guidance.

Courses can be designed to enable students to take vocational agriculture and still go on to university.

Limitations: Vocational agriculture should not be permitted to replace basic subjects such as English, science, mathematics, etc., in the curriculum. To obtain assistance from the Federal Government for vocational agriculture, the school program must provide 50 per cent of the school time in instruction for an occupation in agriculture.¹⁾ Some of this instruction may be a waste of time for those from the farm. They need the academic training. An appreciation of nature together with examples in science can give them sufficient agricultural orientation.

Vocational agriculture in the high school is not justified in terms of results or public support. One example of this lack of support is that while there are supervisors for home economics and industrial art programs there are none for vocational agriculture. Supervisors are needed to develop the curriculum and to lead vocational agriculture in growth and development.

The optional nature of the course and economic conditions have resulted in decreased enrolment with fewer schools offering vocational agriculture in recent years.

1) The training agreements state, however, that this 50 per cent may include technical, trade or occupational practice and theory, mathematics, science and drawing, as well as agricultural instruction.

Some departments of agriculture are reluctant to see vocational agriculture taught in the high school.

People do not know much about the possibilities of vocational agriculture; some feel it is a dumping ground for poor students.

Too few schools have vocational agricultural programs. From high school to university we have had straight academic training; our minds are cast in the academic mold and we lack sympathy for vocational training. This may cause the program of vocational agriculture to receive little support from school principals, few of whom are trained in the psychology of vocational education. With a lack of support agricultural teachers may receive poor students--'the screenings'--and their programs may be ruined.

Recommendations: Although about one quarter of those who completed survey questionnaires recommended that vocational agriculture should be taught in high schools, it is difficult to know what these persons' concept of vocational training might be without elaboration of the types of courses they would like to see offered. Some believed that the vocational agricultural program in high school should be designed to meet local needs, with the students receiving high school diplomas and graduates having the opportunity to attend schools of agriculture if they desired. The program might include a special course for young farmers who have graduated from high school. The course would begin after harvest and would deal with farm management problems.

Some people suggested that vocational agriculture should only be offered in high schools having professional agrologists on the staff. One person stated that vocational agriculture should be taught as an extra optional subject, so only interested pupils would enroll in the course. This would be a deterrent to lazy students who would like to drop one or more of the tougher academic subjects and take agriculture. Other people thought that a vocational agricultural option would encourage young people to stay in school longer. One of the respondents from Quebec suggested that secondary schools, at least those in rural centres, should have an option in agriculture.

A few persons who elaborated on the program of vocational agriculture thought that the boys should be encouraged to run their own projects on their fathers' farms or on rented land. The agricultural teacher would give these boys on-farm instruction, by making several visits to their projects during the summer months. The farm mechanics program attracts boys taking agriculture at first. After some training in other subjects, however, they realize the importance

of them and of agricultural training in general. One person from Alberta stated that vocational training in agriculture should be preceded by a pre-vocational course which would assist the student in selecting the proper vocation. A few persons felt that the ideal way to train vocational agricultural students would be to have the school situated on a farm. This is outside the domain of the usual type of high school and will be dealt with a little later in this study.

Agricultural subjects in high schools, as distinct from vocational agriculture courses, were held to be not generally practical, but are often referred to as 'textbook' courses. These subjects have often been taught by instructors who were not trained to teach agriculture. They also lacked the facilities for teaching it. As a result, these subjects are not adapted to the needs of the farm boys. The courses in agriculture must either be brought to a standard worthy of respect, or eliminated.

The teaching of agriculture in high school was introduced to New Brunswick a few years ago, but it was dropped because of a lack of student interest.

A few people opposed agricultural training of any sort in high schools, mainly because they felt the available time for the present-day curriculum was too limited and students should concentrate entirely on basic subjects. It was also stated that agriculture cannot be taught properly in high schools because teachers do not want to teach the subject in the high school environment.

Schools of Agriculture

The following assessment of these includes the Regional Intermediate Schools of Agriculture in Quebec.

Effectiveness: It is a comprehensive two-year residential course planned for young men who want to make farming their career. At some schools of agriculture the student also gets excellent training for jobs in fields related to agriculture, such as agricultural service in industry.

The student has several advantages: he is interested in agriculture because it is his chosen career; he often develops life-time contacts with leaders in agricultural science; he is in residence with young people from various parts of the Province and is initiated to team work and team study. In residence, the student is also removed from the prejudice and traditional methods of his home farm and district.

The schools of agriculture teach what is needed for their particular area under good conditions, for a sufficiently long period to allow mastery of the subjects taught.

The staff of the school are generally well qualified, teaching new concepts and up-to-date methods of production and management.

Former students now established on farms generally do a better job of farming than their neighbours, and are usually leaders in their community and in farm organizations.

Limitations: The attendance is not as high as it should be for efficient operation of the schools and for the replacement of a minimum number of farm operators, because it is difficult to recruit students.

In some cases the age limit is too low and should be increased. Young farmers 25 to 30 years of age would put this training to use more quickly than boys of 16 to 18.

Some students have too low an academic training at the outset. In addition, the training provided may not be practical enough and not adapted to the area. It is hard to teach a practical course in agricultural schools which only operate in the winter when plant life is dormant.

Specialized courses cannot be taught in two years. More specialized third-year courses should be offered. The course in agricultural mechanics at Kemptville is a good example of a specialized third-year course.

The schools of agriculture are not integrated with the high school graduation or diploma programs.

In some schools the enrolment of girls has declined to a very low level. This reduces the co-educational value of the program.

Some schools may not be well located while others are not always competently managed.

In some areas where families are very poor, and where students are required to pay more for room and board than the available grant, financial obstacles may make it difficult to attend the school of agriculture. Other students cannot attend because farm duties will not permit their absence over a period of time. Those who can go are often immature and unable to appreciate instruction regarding subjects such as farm management.

The diploma does not necessarily provide job seeking status. Young men feel that if they are to go to university they should get qualifications that give them this status.

Graduates do not replace technicians. (They do not fill the bill.)

Recommendations: Some respondents thought that the two-year school of agriculture training was a minimum requirement for boys who are willing and able to stay on farms. Despite the acknowledged low enrolment and corresponding lack of interest in these schools, they were generally recommended as providing the highest class of vocational agricultural training available.

There was some agreement that, in addition to the general two-year course which is aimed primarily towards providing training for future farm operators, specialized technical courses are becoming more important and facilities for these should be expanded. Some instructors and professors from agricultural schools stated that a variety of specialized courses should be offered in a third-year course at the schools. They mentioned the third-year mechanics course at Kemptville Agricultural School in Ontario as an example which could be followed by other schools. Most of these specialized courses would equip students to enter service fields allied to farming and the agricultural industry rather than farming itself; although persons trained in some of these specialties would also be in demand as hired labour on some farms. Several persons listed the specialized fields in which they felt there was a shortage and need for more trained people now and in the future. A list of these specialized vocations will be found in Chapter IV, under sections dealing with specialized training in farm management, farm mechanics and specialized needs in agriculturally-oriented industries.

One person mentioned that the agricultural schools, in accepting students with a Grade IX or X education (Grade VII in Quebec), fill a gap for a forgotten group of people because the technological institutes in several provinces require Grade XI or even higher standing. Other people, however, thought that entrance requirements at agricultural schools should be higher and that Grade XII standing

should be achieved before the student enters an agricultural school. At the University of Manitoba, diploma courses in agriculture are taught at the Grade XII level even though a boy can enter the school with no more than a Grade IX education. The Western Ontario Agricultural School usually discourages boys from entering unless they are 18 and have completed four years in high school.

A number of persons suggested improvements that should be made in agricultural schools. Some people suggested that students do not get sufficient attention in schools located on university campuses where a diploma student must compete with degree and graduate students for a professor's time. There was also a frank recognition that universities are not training people for the technical level in agriculture. In Quebec, for example, where one technical dairy school is in operation now, a few respondents suggested that more of these should be developed. Another suggestion was that the schools should pay particular attention to training that is suitable or adaptable to their particular region or province. A further recommendation was that school of agriculture programs should be integrated with the regular programs of the provincial departments of education. This would mean that students attending schools of agriculture would receive diplomas which could be presented as accreditation towards the high school diploma or towards university entrance.

A few people stated that more students could be encouraged to attend agricultural schools if tuition and board fees were lower. One even suggested that the student's parents should receive compensation in view of the loss of a son's labour while he is attending a school. Another person suggested that students should receive transportation and boarding fee assistance, or subsidies, while they are attending the schools.

"Schools of agriculture should have farm facilities." This was suggested by only a few people, possibly because most of the schools in operation are already situated on or have farm facilities available to them. What these people had in mind, however, were the facilities of an actual operating farm, not an experimental farm or research station. The farm enterprises would pertain to those most suited in the area and the farm would be operated as a commercial enterprise. Students would receive both theoretical and practical instruction and would be required to train on a 12-month basis. Each department of work should be under a practical technically-trained man, rather than a professional, with superior knowledge in his specialty. The number of students should be limited to allow the closest possible contact between instructors and students.

Correspondence Courses

Correspondence courses apply both to young people and adults. To avoid duplication, they will be dealt with here, under programs for young people.

Effectiveness: Correspondence courses can be a useful complement if the courses are well prepared and if some relationship can be established with the instructor. A competent staff of specialists is required.

Ontario Agricultural College has just developed a three-year program which is an in-service type. Pupils work ten months, then come in to college for one month. They are taught soils, plant pathology, insects, nursery work, park management and public relations. Upon graduation they get an Ontario diploma in horticulture. The usefulness of this course has already been clearly demonstrated in the abilities acquired by graduates.

Limitations: Those who follow correspondence courses do not have sufficient background. Additional explanations are often required but are not available.

There is a lack of association with the other students; practical work is often 'nil'.

Recommendations: A few persons mentioned the value of correspondence courses and the potential for development of educational programs through correspondence. The courses could be used to supplement short courses and could even be used as credits towards a diploma or degree.

One person thought that it should be possible to adapt correspondence courses to agriculture, since they are used in so many other forms of technical training. A second person interviewed during the survey, however, regarded correspondence courses as quite impractical for most types of technical training.

Programs for Adults

Short Courses

Effectiveness: Night classes and short courses are effective for up-to-date information and for instructing 'new growers'. They are arranged by, or in co-operation with, provincial extension services so that they are convenient for farmers to attend. Short courses were mentioned by many for their effectiveness in bringing timely and practical information to farmers.

Some respondents thought that field crop and livestock production needs are well taken care of by an efficient extension program, but the farm management field has hardly been touched.

Several respondents stated that study clubs and farm forums appear to be the best media of instructing the rural population.

Limitations: They do not attract enough people. The people who need them most are the most difficult to reach,

Usually the number of short courses is limited because of the shortage of instructing personnel.

They lack a systematic, sequential type of instruction. The content of short courses is limited by the amount of time available, as well as by the lack of education of the farmers in mathematics and science.

One respondent who was responsible for an extensive program of agricultural short courses said:

"Although short courses can serve as in-service training for farm people when organized on a proper basis, they cannot be considered the answer to training needs in agriculture."

Recommendations: Short courses provided by agricultural, education and other departments, including university extension services, were emphasized by survey respondents. A fairly wide variety of opinions on methods and subject range were expressed in relation to short courses.

Because of the wide choice of short-course materials and technical bulletins available to farmers and agriculturists today, some people felt that more selectivity is necessary. Short courses should be continued but they believed there was a need for a greater degree of concentration on certain subjects rather than on broad sweeping programs which try to involve everyone regardless of their interest. Another suggestion was that new kinds of courses must be introduced to help farmers solve new problems. Course topics must be of current interest or farmers will not attend. Experimentation is necessary to determine which courses are most popular with farmers and their wives. In working with adults it is most necessary to work on the basis of demand rather than on the basis of which program administrators believe to be good for the farmer. Under this principle, provincial extension budgets should be increased for those courses that are popular.

There was some concern over the failure to attract more candidates for short courses. One person suggested that the persons who need courses most are least aware of their needs. This, he thought, was probably a direct result of leaving school at an early age, usually before reaching the high school level. It was also suggested that interest in short courses is low because there are too many 'outside attractions' for a farmer's spare time. An experimental farm director in Quebec told us that attendance was very poor at a well-planned and advertised field day on a horticultural topic which should have been of special interest to farmers in the area. He felt that to entice them to come, the farm would have to put on a free barbeque dinner. In other areas, and perhaps in the case of other subjects, interest has not been so low. It was stated, for example, that farmers in Saskatchewan have been interested in welding courses and were willing to pay rentals for facilities to put on these courses.

There was some agreement that short courses should be offered in local communities. One person suggested that on-farm advisory services were important. Another proposed that extension services should work very closely with every farm in the area.

How long should short courses be? There was quite a range of answers to this question. A number of people kept remarking, during our interviews, that farm adults have only a limited amount of time available and can only travel a limited distance from their farms to attend courses. At the same time, however, not a few people seemed to be concerned about hobbies and recreation programs for both adults and young farm people, which would suggest that farmers do have more time available in their daily operations than they have had in the past. The length of time suggested for courses by survey respondents varied from half a day up to five or seven months; although several persons felt that courses of one day up to a week's duration were most satisfactory.

In British Columbia, some of the most effective short courses are what is known as the 'chautauqua courses'. These are sponsored by the Department of Agriculture. They consist of an afternoon and evening meeting with different speakers at each meeting. Lectures are given on management of orchards, pruning and spraying. Chautauquas are moved from one area to another in the Okanagan. They are operated for about six weeks during the winter period and have been held for at least 15 years. Another example of a successful short course program is the 12-week, one-night-per-week course given at the rural youth centre in Cayuga, Ontario. This program is sponsored jointly by the departments of agriculture and education. Through advanced registry, the most popular out of a list of available courses are chosen. The courses start late in November and continue to near the end of February. In the 1960-61 year, 250 people registered in these short courses and the attendance averaged 80 per cent. These courses have been offered for 13 years. One of the most successful classes is the welding class. In addition to agricultural topics, such courses as oil painting, hair-dressing and dressmaking are offered. There is also a class in public leadership.

One person suggested that extension councils should be developed to determine the proper extension program to suit needs. This person also felt that local people need a greater say in program development.

Several other people simply stated that they were in favour of short courses, without enlarging on this. One person felt they should be developed everywhere.

A few persons suggested that more use should be made of university extension services. More adults should attend short courses and campus field days.

Farm Management Clubs and Courses

It should be made clear that study groups and courses under this topic are, in reality, short courses and the only thing we are doing here is to separate farm management courses from others so that opinions on them can be marshalled in one place.

Effectiveness: When conducted by well-trained extension personnel they are proving to be valuable to farmers.

In some areas farm management clubs are doing a good job of training.

Group farm management schools are most effective in this area (Alberta). Farmers and their wives attend at regular hours through the winter months. Farm groups arrange for their own hall. The demand for training is greater than can be met by available instructors and the amount of time they have to teach classes.

Working together under the guidance of specialists and agricultural representatives, farmers get to the root of their problems. The management program helps them determine the type of farm organization they should strive for and who to call on for specialist information.

The clubs have operated for three years in Saskatchewan. Measurement of their value has not been attempted. However, there are indications that practical use is being made of them.

The clubs serve to make farmers cost conscious and knowledgeable about the comparative advantages of different enterprises. For many farmers, this is the first beginning of an attempt to keep records which can be of any value to them. Programs such as these provide concrete evidence of progress or lack of accomplishment and people like this tangible evidence.

They are very useful. They show farmers where they stand. If all farmers belonged, the clubs would go a long way in solving problems that confront them.

The farm management group organized at Carman, Manitoba, by the University of Manitoba, appears to be the answer to the farm management approach.

Limitations: Extension work in management is limited by the shortage of personnel and the difficulty of reaching those farmers who need help the most.

Not enough people take advantage of the opportunity afforded to join clubs.

In teaching adult farmers, the instructor can only move along at the speed of the slower ones taking the course.

The extension staff has not had enough experience to direct clubs adequately. Special courses in management should be available at universities for agricultural representatives.

Clubs must be expanded to meet needs in this area. Very little training is provided in the field of marketing.

Recommendations: Farm management training was held to be very important. People attending group interviews conducted during the survey seemed, at times, to put almost too much emphasis on the importance of this aspect of training and not enough on others. The following is a statement from one of the survey respondents on the subject:

"Most adults engaged in farming have a quite adequate knowledge of cropping practices, livestock feeding, breeding, etc. The great lack is in the farm management and record keeping fields.

"Farm management can best be taught in an environment of frankness, trust and respect, between instructors and students. Farm management clubs which have succeeded by accenting these principles should be promoted and aided by seeing that adequately trained specialists are available to service the clubs. These clubs should still pay their way and would, I think, continue to do so.

"A specialist who has access to your books on your farm could be invaluable."

Most respondents considered that, with an increase in the size of farm businesses, it is essential for farm management to be taught. Teaching the subject on a piece-meal basis is not satisfactory. One person thought that farm business clubs offered an immediate medium for adult education outside of formal schools. He stated, however, that many other long-established farm groups have failed to rejuvenate their programs. They have not attacked any agenda that would involve a sustained period of learning.

It was felt that farm management clubs must be expanded to meet the needs in this area. Women should be included in these clubs, as they are vital in determining the operational and managerial success of a farm. Farm adults need help in farm production management, financing and father-son agreements. There is a great need for knowledge on the amount of capital invested and the proper use of credit facilities. In addition, very little training has been provided in the whole area of marketing. In general, respondents from Alberta,

Saskatchewan and Manitoba, where farm management clubs are in existence, seemed to favour an expansion in the number of them. Respondents from British Columbia, Ontario and Quebec, where some farm accounts are being recorded with government and university assistance, also favoured an expanded program of management training.

There was not much expression of opinion on the length of time required for farm management courses. In Alberta, farm management clubs, sponsored by the Department of Agriculture, received a series of 12 evening instructional periods. The farm business lessons provided at Cayuga, Ontario, were also for a course of 12 evening lectures. One survey respondent suggested that winter courses of five to seven months' duration should be organized at the local level. There was some agreement that farm management courses should embody a more sustained learning process if they are to be of practical use to farmers. In Manitoba, farm business clubs sponsored by the Department of Agriculture meet ten times a year, and the course is given for four years.

In addition to management subjects pertaining to the individual farm, which have already been listed above, one respondent suggested that study groups should include: community problems, the introduction of new special crops, such as tobacco, field peas and oil-seeds.

Homemakers' and Women's Institutes

Although training in homemaking applies both to girls and adult women, respondents to this survey provided more details on training for adults--particularly for the farm housewife--rather than for girls. The whole subject received an insufficient amount of attention on the part of respondents, possibly, because very few women and home economists were included in the survey.

Effectiveness: They have been very useful in the past for teaching handicrafts, gardening, cooking, etc. Working with home economists, they provide most of the educational work among farm women--developing leadership, citizenship and training in homemaking.

They are very effective in providing rural leadership but are more interested in community improvement programs than in educational standards.

Limitations: They do not have an effective program for training in agriculture, i.e., training to help keep record books, to help make farm decisions, etc.

Recommendations: For girls, survey respondents suggested training in the repair and maintenance of household appliances, home nursing, bookkeeping and typing. One person suggested that courses in homemaking should be added to the curricula of technical institutes.

In general, people felt that a farm housewife should receive training in home management which would include the planning of a new home or the remodelling of an old one. The few home economists, who attended group meetings during the field trip made by the survey team, stressed the term 'buymanship'. Training in buymanship is, of course, especially essential to a housewife because of the large proportion of the family income which is spent by them. In connection with this, a housewife should be trained to distinguish between rational and irrational advertising and should be able to resist 'salesman pressure'.

One person suggested that women's institutes, working through district home economists, are providing most of the educational work among farm women. Another thought that there was an urgent need to secure more specialist instruction in homemaking and other agricultural vocations. These specialists could do field work with people in the summer and provide short course training in the winter.

One home economist who attended our group interviews criticized home economics training as being suitable only for urban housewives and not adaptable to rural farm wives' needs.

Other Programs

Provincial federations of agriculture are carrying out effective short courses and meetings for men and women, and are encouraging 4-H clubs. The National Farm Radio Forum, (a joint project of the Canadian Federation of Agriculture, the Canadian Association for Adult Education, and the Canadian Broadcasting Corporation) has been providing a means of education on farm problems and opinions of farm people since 1940.

In the Province of Quebec there are several programs that are not found in other provinces. Among these are the junior agricultural Catholic clubs, the young naturalists' clubs, the young breeders' (livestock) clubs and the Union of Catholic Farmers. The dairy technician course at St. Hyacinthe is also the only technical course of this type in Canada. A number of respondents recommended these programs in Quebec. One person felt, however, that the junior agricultural Catholic clubs and the young breeders ought to be unified under the 4-H program.

In Manitoba the Agricultural and Homemaking School at Brandon was changed to the Agricultural Extension Centre in 1958-59. The enrolment in the two-year diploma course had decreased so that it could be handled at the University School of Agriculture at Winnipeg. The Centre at Brandon now offers one-week residential short courses to persons over 18 years of age during the winter months. The topics for the short courses are varied and include farm management, tractor maintenance, rural leadership, farm policy, homemaking for women, etc.

In the Bathurst area of New Brunswick, a winter agricultural group discussion program has operated under the direction of Sacred Heart University since 1953. In October each year, group leaders are given brief courses. The study program which follows, consists of group meetings in farm homes or schools, once a week, with general meetings once each month. District agriculturists provide leadership and advice at general meetings.

IV AREAS OF TRAINING WHICH SHOULD BE DEVELOPED FURTHER

For Young People

In addition to the over-all programs given in schools and other courses which have been covered in Chapter III, a number of respondents to the survey referred to particular areas of training which, in their view, should be provided to meet needs more adequately. For young people, these areas of training are listed in Table 7.

Table 7 - Programs which should be Developed to Meet
Present and Future Needs of Young People

<u>Program or Courses</u>	<u>Number of Respondents Recommending Program</u>
Social and leadership training	5
Guidance	12
Alternatives to academic high school	5
Vocational and technical schools in rural areas	6
Apprenticeship type of training	2
Specialized training in farm management	19
Specialized training in farm mechanics	4
Vocational training other than agricultural	10

Since question 4 of the survey form, pertaining to the types of programs that should be developed, was not set up in a regular tabular form, the results shown in the above table should be considered only as a broad approximation of the consensus of opinion of those who completed forms. Certain programs, however, are sufficiently well recommended to indicate their importance. Other programs favoured by a smaller number of persons may or may not be a true indication of opinion, simply because some people may not have had these programs or courses in mind when they completed their forms. For that matter, the numbers shown opposite each of the programs are probably an under-estimation of the actual number favouring them. With these precautionary notes in mind we can now turn to an analysis of the opinions on each type of program listed in Table 7.

Social and Leadership Training

Several people who completed survey forms stressed the need for more community leadership to meet the needs of the concept of the spatially-enlarged rural community today. Young people need sociological training for character formation on such aspects as human rights and attitudes. They should know more of the social, political and economic aspects of life in Canada and other countries.

Because of the relative degree of isolation from cultural centres, rural children also require more emphasis on training in the arts of painting, music, public speaking, etc.

Guidance

The response of people interviewed during the survey, and of those who completed survey questionnaires, indicated that guidance is being taken quite seriously at present.

Some persons suggested that guidance should begin when children graduate from elementary schools, i.e., at the Grade VII or VIII level. At this stage guidance counsellors should visit the children's homes and consult both parents and children to encourage young people to attend secondary schools. It was stated that rural people, especially, need more motivation to continue their studies. They must receive information on the disadvantages of an inadequate education for young persons competing for jobs today.

At the high school level young people should receive career guidance. The curriculum should include a special course for this purpose. Those young people who are unwilling or incapable of completing all of the academic subjects in high school must be directed towards acquiring skills. One person put it this way: "The objective in all cases should be to equip the boy or girl to make a living and to contribute to the welfare of society to the best of his or her ability."

So far as agricultural training is concerned, it was felt that both students and parents do need counselling in order to realize the variety of specialized fields and opportunities available to agricultural students. Students should be thoroughly familiar with the training programs offered at the two-year agricultural schools and at university.

In Manitoba career exploration programs have been given to 100 4-H members each year. In a three- to five-day program, these boys and girls stay on the university campus and hear speakers from agriculture and other fields. A program of talks or 'information days' such as this should be adopted at the high school level. Qualified guidance instruction should be available at all schools but, particularly, at high schools.

Alternatives to Academic High School

Several persons felt that more alternative courses are required besides the general courses authorized by departments of education. One person suggested that several alternative course programs or curricula should be worked out for students who drop out of secondary schools because of their inability to complete academic courses. These alternate courses would enable students to remain in school longer, and would qualify them for vocations or at least further vocational training in various fields.

As for agricultural training, some people suggested that high schools should offer agriculture as a subject to provide an agricultural orientation for students. Some thought that the regular science curriculum, in physics, chemistry and biology, should be given an agricultural orientation. Agricultural instruction is now being offered as an optional science course in this manner in many of the district high schools in Ontario. One of the strongest arguments for teaching agriculture in this manner is that some of the boys who go back to farms directly from high school will not have an opportunity to learn agricultural science unless it is offered in high school.

Vocational and Technical Schools in Rural Areas

Some people recommended that the highly centralized system of vocational and trade schools be decentralized in regional centres. Some of the respondents from Alberta agreed with the Alberta Cameron Royal Commission on Education of 1959, which recommended that the regional two-year agricultural schools should become junior community colleges and should offer other technical courses as well as agriculture. The present agricultural schools would constitute the nucleus of a system of community colleges. Technical education programs would apply at the Grade X to XII level. Other respondents to our survey, however, felt that the Grade X level is too early for youths to make up their minds on a particular vocation. People who supported the community college idea felt that it would be better to leave vocational teaching to these institutions than to dilute high school courses with extra subjects.

Apprenticeship Type of Training

Concerning training for farm operation, it was suggested that apprenticeship training is highly impractical unless the point is reached where it will be necessary for a farmer to have a licence to produce. One person, however, suggested the apprenticeship type of training might help to supply a pool of hired farm workers to satisfy the farmers' demand. He also thought that there was a need for this type of training for farm managers who could relieve farm operators.

Several people indicated that there was no need of a substitute for the apprenticeship training a boy could get on his father's farm--if the father was a good farmer.

In an endeavour to help supply sufficient qualified hired labour for farmers, the Department of Agriculture in Manitoba plans to start a two-week course in dairying and livestock feedlot operations.

Specialized Training in Farm Management

Those who stay on the farm require management training to operate a farm successfully today. Production and marketing economics can also be very useful in different fields of specialization. For those who plan to stay on a farm, management instruction should include farm financing and the proper use of credit, farm production organization and marketing. In addition a course should be given on bookkeeping.

One person suggested that farm management training should include:

- a) the selection and co-ordination of enterprises
- b) the selection of production techniques and optimum use of all production factors
- c) financing
- d) planning investments
- e) adjusting to changing conditions.

There were not many suggestions as to the stage at which training in farm management should be given or where it should be made available. One person suggested it should be taught in the regular high schools. Another suggested that the agricultural schools should stress the business of farming more than any other training. To do this, one person stated, agricultural schools would have to alter their curricula.

Specialized Training in Farm Mechanics

There was some lack of agreement over how much specialized training is required by persons who intend to operate farms. With the introduction of more complicated equipment on farms today, some people indicated that too much time is required to repair machinery--especially for busy dairy farmers--thus restricting any major repair work on machines.

An implement company service manager from Saskatchewan stated that, "Farm machinery training is not so necessary for farmers as for machinery service men." Farmers should, therefore, concentrate on the care and daily or periodic maintenance of machinery and leave major overhaul work to other specialists. Other people suggested that farmers specializing in grain production only, have sufficient time to do more intricate repair work.

As for training in farm mechanics for would-be farmers, survey respondents suggested they should have courses in general mechanics which would include the repair and maintenance of farm equipment and household appliances. In addition, they should have some welding instruction and bookkeeping related to the management of machinery. One person suggested that courses in farm mechanics of five to seven months in duration should be available in local farming communities.

Vocational Training other than Agricultural

In approaching the subject of other than agricultural training, most of the respondents who completed survey forms seemed to be thinking about the large numbers of people who must inevitably leave the farms and who should have specialized training to prevent a surplus accumulation of unskilled workers and unemployment. There was little, if any, reference to skilled trades training for young farm residents who have part-time work in towns and cities.

Those who recommended other vocational training should be made available thought that there should be an increased number of technical schools teaching skilled trades. These should be decentralized in provinces, rural students should have a wide range of vocational training opportunities available to them, and there should be more vocational workshop facilities. Trade training should include courses in mechanics, drafting, plumbing, electricity, etc.

Some respondents from Manitoba suggested that rural girls should be encouraged to take nurses aides courses to alleviate a shortage of trained women in both rural and city hospitals.

For Adults

In a manner similar to the foregoing study of programs which should be developed for young people, Table 8 provides some indication of the enthusiasm for particular areas of training referred to by survey respondents for adults.

Table 8 - Programs which should be Developed to Meet
Present and Future Needs of Adults

<u>Program or Courses</u>	<u>Number of Respondents Recommending Program</u>
Group studies and farm organizations	9
Adult education	4
Training centred around local high schools	5
Residence training at agricultural schools	5
Use of television for training	5
Specialized agricultural training	7
Vocational training other than agricultural	4

Group Studies and Farm Organizations

As suggested by one of the respondents to the survey, "Group activities seem to be necessary for a good community life." One of the worries expressed by this person and by a number of other respondents was that group sentiment and action are being lost in most farm communities. Leadership in community affairs and other areas where group action is required now tends to be centralized in larger towns.

A few persons suggested that more farmers should take an interest in 4-H Club work. 4-H activities encourage more leadership among adults, and more interest in community progress generally. Other people felt that more junior farm clubs, for people 21 to 30 years of age, ought to be organized. Other farm organizations, such as the Saskatchewan Farmers Union and farm co-ops in Quebec, were recommended as a means of getting farmers together for study purposes. One respondent suggested that agricultural societies, such as the Agricultural Institute of Canada, could organize educational programs dealing with various phases of farming.

In general, those that mentioned group studies and organizations, felt that it was desirable to impress upon farmers the roles of farm organizations and the need for unrestrained discussion in community farm groups. One person said there could be some integration of farm organizations if a few were allowed to die after achieving their purpose.

Adult Education

One of the survey respondents from Manitoba suggested that adult education should be organized in rural areas on the same model as in urban centres. He felt this might be possible through local school boards.

More than one person remarked that too few farm people know about the duties and powers of local government. A short course dealing with the fundamental acts affecting municipal government would be very useful.

Some people suggested that there should be a progressive continuity of courses in adult education and that a fairly broad approach should be taken towards subject material. In addition to studies on local government, some of the people interviewed during the survey thought that farmers should have a fairly comprehensive training in Federal Government legislation, particularly in relation to agricultural price support, stabilization programs, and other agricultural legislation such as the Prairie Farm Assistance and Rehabilitation Acts.

A respondent from Prince Edward Island recommended leadership training through adult education, but stated that, except for farm forums, adult education was not available in Prince Edward Island.

Training should be Centred around Local High Schools

A few people suggested this, stating that the expensive facilities of the auditorium and vocational training equipment in larger high schools should be used for adult education and night school classes. One person suggested that vocational training for adults in a high school program should be integrated with and followed by one- or two-month courses conducted at the schools of agriculture.

Residence Training at Agricultural Schools

Only a few people suggested that farm adults should attend the two-year agricultural schools. Those who did, considered that residence training provides much more scope for intensive uninterrupted learning.

One person recommended that a whole series of one-, two- or three-week courses should be given at schools of agriculture, technical schools, disused air fields, etc.

Use of Television for Training

A few respondents from several provinces believed that there should be a greatly expanded use of television for technical topics. This seems to be about the only way to reach the bulk of the people at present and it should be a very effective means of imparting knowledge.

In Manitoba, an agricultural training course for adults was televised by the Canadian Broadcasting Corporation early in 1962. It was planned to follow the five-day program, which included about eight hours of instruction, with an audience survey to gauge its effectiveness.

Specialized Agricultural Training

As far as short courses other than farm management are concerned, mechanical training, and the servicing and maintenance of machinery were favoured by survey respondents. One stated, "With our extensive mechanization it is necessary for farmers, young and old, to be mechanically minded--to be machinists, welders, plumbers and have a knowledge of building construction. A technical training program must meet these needs."

Another person suggested training in the repair and maintenance of power equipment and shop tools. It was felt that farmers who have some tools and know how to use them can save money in their farm operations.

One person suggested a separation of courses for young and older people. Young people would benefit from more intensive courses in welding, electrical wiring and motor mechanics; older people, from courses of one-half to one day's length in horticulture, feeding, fertilizers, and hobby courses.

There was also a suggestion that vocational workshops should be available to adult farm people, so they could come in their spare time to seek advice in mechanics or carpentry, etc., or even to engage in some practical work.

In addition to other subjects, courses in soils and soil management and in the control of weeds and insects were mentioned as those that should be included in an educational program.

Vocational Training other than Agricultural

"Many adults are misplaced on farms. Some vocational or technical training should be provided to enable them to supplement their income. There is more necessity for training those who will leave farms than those who remain."

It is rather interesting to note that the above statement was made by a farmer. Some of the survey respondents who recommended technical training in other fields felt that farm adults might be particularly adaptable to occupations in industries that are closely associated to agriculture, such as forestry work or work in other primary industries. Other persons simply mentioned the advantages of technical training without elaborating as to the types of training that might be most suitable. There was no mention of guidance programs which would assist adult farm people to choose the type of non-agricultural vocation for which their background and education would best suit them.

For Instructors

Although quite a number of the respondents to our survey questionnaire did not answer this section as fully as those on training recommendations for young people and adults, some people gave particular attention to this part and provided fairly detailed suggestions.

Generally, as can be seen from Table 9, respondents favoured extension training qualification for instructors engaged in vocational agricultural work. Qualification in specialized technical fields, such as farm management, was the next most often mentioned requirement. These and other factors will be enlarged upon in the order shown in Table 9.

Table 9 - Programs which should be Developed to Meet
Present and Future Needs of Instructors

<u>Program or Courses</u>	<u>Number of Respondents Recommending Program</u>
Training in leadership and sociology	8
Training in extension methods	25
Should have a university degree	10
Should have post-graduate training	7
Refresher courses and educational leave	13
Specialized training in farm management	11
Other specialized training	9
Salary incentives	3

Training in Leadership and Sociology

1) "Instructors should know their subjects and be able to lead a group into a good lively discussion." 2) "They must become well versed with farm peoples' wants and desires. For this, they need training in the understanding of people. For results, the confidence of the farm people must be secured. This takes time and sound reasoning." 3) "Well qualified instructors who take well with the people are a must if any training program is to be a success."

The above statements were made by three different respondents, all of whom seemed to be saying the same thing in slightly different ways. There is a need for instructors to be trained in leadership, public relations and other sociological fields. It was suggested that instructors should have taken classes in these subjects. These classes should also include: adult learning principles and the concept of continuous knowledge, human relations, the social community, some knowledge of farm and professional agricultural organizations and special interest groups. Special courses of this kind should be provided for 4-H leaders.

In addition, one or two respondents remarked that instructors should know and be able to enlarge upon additional opportunities available in vocations, both agricultural and non-agricultural, outside their special fields of interest. This would qualify them to give vocational guidance.

Training in Extension Methods

How do you obtain good teachers and workers for agricultural extension and vocational training? One survey respondent made the following statement on this subject: "The problem of obtaining qualified instructors is the greatest single obstacle in establishing a sound program of vocational agricultural training. An instructor in this field should have the following qualifications:

- a) a degree in general agriculture
- b) special courses in agricultural education methods such as philosophy, course organization and rural sociology
- c) experience working in agricultural communities."

Another person held a similar opinion about this problem. He stated that the present weakness in training is the lack of adequately trained instructors in the extension field. They have a very general course in agriculture and usually little training in instruction techniques and in specialized fields. Leaders in 4-H clubs, and short courses require basic teacher training.

In trying to visualize the ideal training and aptitudes required in extension workers, one person listed the following desirable qualities: "The need is for practical men and women who have a basic training in the sciences, plus social and educational training. These people should have the following courses and qualifications:

- a) a university degree
- b) adequate job induction
- c) refresher courses while in service as a teacher--these would be given to meet major training deficits
- d) tours, conferences and exchange visits
- e) graduate training, leading to the master and doctoral levels."

This person said that the most important subjects in an instructor's training program were extension methods, organization of programs, agricultural economics, farm management, marketing, sociology and psychology.

For extension workers and instructors already in service, one respondent suggests that there is a great need for:

- a) general refresher courses for updating knowledge
- b) concentrated courses of not less than two weeks duration in special fields such as farm management
- c) university courses to improve extension methods
- d) travelling to observe methods in farming, homemaking and extension teaching.

Some respondents considered that it was desirable for an instructor to have a farm background, and several suggested that instructors should be chosen with care to ensure they are properly qualified and have the proper aptitudes. In the words of a former university dean of agriculture, "It is as difficult to secure a gifted extension worker as it is to discover a potentially creative research worker." Instructors should have the ability, the dedication and the natural aptitude for this type of work.

A few persons mentioned the inadequacies of existing university and department of education programs in this area of teacher training, as far as agricultural instructors and extension workers are concerned.

Should have a University Degree

Ten respondents recommended that teachers should have a university degree. Since many extension workers, such as agricultural representatives, already have degrees, those satisfied with the status quo may not have given much thought to the subject and, therefore, this may be an understatement of the opinion of all respondents.

One respondent proposed that an instructor should have a farm background, a degree and five or more years of experience as an extension agent. Another person suggested that after graduation a prospective instructor should have practical training in a school of high calibre, such as the Agricultural and Technical Institute at Farmingdale, New York.

A few of the respondents from Quebec recommended that the directors of the special regional schools of agriculture in Quebec should be agronomes.

One person suggested that a qualified instructor in agriculture should be on the staff of every rural high school.

Should have Post-Graduate Training

As shown in the above table, some respondents stressed post-graduate training. A few persons said that post-grad training should be subsidized.

Refresher Courses and Educational Leave

Quite a few respondents mentioned the desirability of refresher courses, in-service training and educational leave. It was suggested that there should be a system of continuing agricultural education for extension workers at the university level. Training in new techniques is essential to enable instructors to give technical advice. Occasional Sabbatical leave to improve an instructor's qualifications and to give him new perspective should be a necessity rather than a luxury. These and other similar suggestions and recommendations were made with respect to refresher courses. Respondents from almost every province seemed to be unanimous in their opinions concerning the necessity for these additional training schedules.

Specialized Training in Farm Management

In addition to training to equip instructors to teach and to do extension work effectively, a number of respondents recommended that agricultural instructors should have a superior knowledge in one vocational field so that students would immediately recognize this ability and would be attracted to take training in the field. A specialized knowledge in farm management was recommended as a desirable qualification by some respondents. One stated: "There is a great lack of instructors capable of teaching farm management adequately. An instructor requires both technical training and practical experience to do this job."

One respondent suggested that graduates of the two-year schools of agriculture should be permitted to instruct in agricultural economics and related subjects in high schools which have these subjects on the curriculum. Another person said that farm management should be emphasized more at the university level, so instructors would be available for rural community programs.

Other Specialized Training

One respondent suggested that instructors in vocational and extension agricultural work should be required to meet certain minimum educational and skill standards. Another recommended special courses for instructors who are serving now to provide them with more specialized training.

With the exception of stressing farm management, there was little elaboration on the specialties most urgently required, possibly because respondents had already completed this kind of information in the survey form with respect to training for young people and adults.

Salary Incentives

It is rather surprising that such a small number of people referred to an adequate remuneration for instructors as being necessary to attract and hold them in agricultural extension and vocational training fields. The few people who did make remarks on this factor stated that salary incentives are necessary for improved or special qualifications and salaries should be used in an objective way to motivate instructors in carrying out their training programs.

V CONCLUDING OBSERVATIONS AND PROPOSALS

Training Programs that should be Extended

The trends in agriculture and the relative lag in educational attainment in rural versus urban areas, described in the introductory chapters of this report, should be considered in planning educational programs. The disadvantages of low educational qualifications have already been revealed only too clearly. Out of 225,500 registrants for employment at National Employment Service offices in Canada in September, 1960, it was found that 55 per cent had not reached the secondary school level and only 16 per cent had finished secondary school. Twenty-eight per cent had failed even to complete primary school.¹⁾

Under the increased emphasis on technical and vocational training and the new Agricultural Rehabilitation and Development Act, both academic and technical knowledge should be improved in rural areas, despite the fact that local finances and instruction facilities may not be ideal. As far as vocational skills are concerned, an educational system should provide farm or other rural people engaged in fisheries and forestry activities with technical knowledge needed in their own vocations.

It has been pointed out in Chapter I that government-sponsored vocational education in agriculture reaches only a small proportion of the farm people. Moreover, what appears even more striking, to one who questions persons connected with programs in Canada, is the apparent lack of enthusiasm and interest in vocational training. As stated by one of the respondents to our survey in Chapter III, "Our minds are cast in the academic mold and we lack sympathy for vocational training." Taken to an extreme, this reminds one of the snobbishness of the scientist who wondered why Alexander Graham Bell "...wasted his time in doing something that was merely useful" in attempting to invent the telephone.

In addition to the assessment of important trends and their relation to training programs outlined in the beginning of this report, it is important to keep in mind that education will probably be more properly oriented and adapted to needs if directed towards the improvement of the human resource, rather than towards the more narrowly confined needs of agriculture, fisheries or any other industry. Education should be used, not as a tool to manipulate industries towards desirable goals, but rather as an effective means of helping the human factor to adjust and to profit by changes in the use of other resources which can raise productivity levels and income.

1) Final Report of the Special Committee of the Senate on Manpower and Employment, Queen's Printer, Ottawa, 1961, p. 62.

With a large number of rural students dropping out of our schools before entering high school, we cannot overlook the teaching of an introductory knowledge of agriculture in science courses in elementary schools. It would appear that up-to-date science text books can provide basic knowledge about the formation of soils, plant growth, etc. In Saskatchewan, for example, a representative of the Saskatchewan Institute of Agrologists, who also is a member of a committee on curriculum planning for the Department of Education, recently reported that the science books used in elementary and secondary schools contained a considerable amount of high quality agricultural material.

It is difficult to bring the large variety of 4-H and Junior Farm Club activities within the scope of government-sponsored training in vocational agriculture, but, if possible, a nucleus of extension and community leaders, in each province, should be given vocational teacher training under the new federal-provincial technical and vocational training agreements.

The provision of vocational and technical training in high schools should be extended. An attempt must be made to provide facilities for more adequate skilled training, not only in agriculture but also in other vocations, to both students and adults in rural areas. In making this training available, guidance becomes of major importance so that students who possess academic aptitudes and ability will retain the necessary classes for admittance to higher technical institutes and universities. However, it should be possible to satisfy those who favour good academic training in high school with a composite program which does not degrade its academic training but, in addition, offers vocational training for those who both desire and need it. More will be said about high school and other programs in remaining sections of this chapter.

The existing schools and programs for vocational and technical agricultural training cannot be changed overnight. As a matter of fact, the capacity for additional students at a number of the two-year agricultural schools suggests that, although new schools may be required to serve certain areas, some of the required facilities are available in other schools if a way can be found to make more effective use of them. In addition to the present schools of agriculture, specialist or technician training programs, such as the St. Hyacinthe, Quebec, dairy course and the agricultural mechanics course at Kemptville Agricultural School, Ontario, should be extended. This training helps young men to obtain employment in industries related to agriculture.

For adults, short agricultural courses, including farm management, adult education and extension programs should be continued. In certain depressed rural areas particularly, it is imperative to encourage adults to upgrade their education and to provide facilities to make this possible. We would endorse the plans of the Extension Service of the Manitoba Department of Agriculture to attempt to upgrade young rural adults from the Grade IX or X

level to Grade XII, as outlined briefly in Chapter IV. Returning to the subject of agricultural short courses, these and other extension programs have for some time provided training for farmers on many agricultural problems and they should be continued and expanded to meet the needs of each area.

New Programs and Changes Required for Young People

Guidance and Counselling

Special care is needed in the education of rural young people to ensure that they will be assisted in choosing a career or occupation that is suitable to them. Because farm people tend to be more isolated in their communities, they are usually less aware than others of training and job opportunities in non-agricultural industries. For this reason, it is necessary for young rural people to have a broad type of educational program in their early years. As school career guidance programs in most rural areas are probably lagging behind those given in urban areas, increased effort and emphasis are required in this field.

There was a time not so far removed from the present when the less studious or less brilliant children were kept on a farm because their parents felt that they could not fare better elsewhere. Many of these children received only a minimum education, yet these are the children that have subsequently become our farmers in the much more highly-competitive industry of today. Although surveys that would examine the personal characteristics in education and training of farm operators in relation to economic progress have not been conducted on any scale, it is generally agreed by people acquainted with farmers that the most successful operators are those who have had a fairly substantial amount of education and training. On the other hand, the influence of poorly-educated farmers on their children can seldom be to the advantage of the latter, particularly if the family income is too low to provide good educational opportunities. Unfortunately, families with low incomes generally have the largest number of children, which adds another obstacle to training and educational opportunities.

Both students and parents need guidance to prevent the persistence of seriously low educational attainment. In addition to urging youths to attend secondary schools, technical institutes and universities, a guidance program should:

- a) take stock of all existing and possible future occupations in Canada, by area and by province
- b) determine the employment and income possibilities in different occupations

- c) determine, as far as possible, the amount of education and kind of vocational training necessary for future occupations
- d) appoint a committee or agency to make surveys required to provide guidance information
- e) establish a publication to provide continuing information to guidance specialists and others
- f) train specialists to make use of this information for youth guidance.

The services of National Employment Service offices, the Federal Department of Labour and other government departments should be utilized wherever possible in guidance programs.¹⁾

Since many farm youths will not remain on farms as adults it is necessary, as already stated, to provide them with varied academic subject material and vocational opportunities. Young people who have talents for vocational or technical trades should be able to discover these through the availability of pre-vocational courses which could be given in the senior primary and first secondary school grades. In smaller high schools in rural areas, if laboratory equipment and teaching staff are not available to provide an introduction to vocational skills, the occupational guidance instruction should be increased and students' interests should be broadened as much as possible by this means.

Moving on towards the last year in secondary school, it is desirable, first of all, that as many young people as possible should complete their high school classes. However, as stated by one of our survey respondents, "All young people are not equipped to do so, or for one reason or another they may not wish to. Several practical curricula as alternatives to the regular high school curriculum should be worked out and made available to these students. These curricula would give such students better qualifications and assist them in becoming established in the vocation of their choice." It is very unlikely that it would be possible to provide a flexible program such as this in small rural high schools but an attempt should be made to provide more flexibility in larger central and regional schools.

Theoretically, boys and girls are entitled to remain in the public school system in most provinces until they are 21 years old. If a student requires some adjustment in either academic or vocational achievement,

1) The Manpower Resources Division of the Department of Labour, for example, conducts training and occupational guidance research and publishes guidance information.

it should be made before leaving high school if at all possible. It should be impressed on students that there are many more alternatives, in either additional training or occupations, open to them after Grade XI or Grade XII graduation.

Students who choose agriculture as a career towards the end of their public school training should be further counselled to help them to decide between working on farms, with the aim of eventually becoming farm operators, and specialized technical or professional occupations in which they would provide services to farmers and the agricultural industry.

Deciding on Farming

In deciding whether to farm or not a boy should have certain fundamental information to answer the following questions:

- a) is the farm business large enough to support two families (often the father expects to farm for quite a few years, and provisions should be made to provide a second home, in the event the young man gets married)
- b) if the farm is not large enough, could it be made large enough by the purchase or rental of more land, or adding to enterprises on the farm
- c) can a reasonably fair father-son agreement be arranged, so that the boy could eventually obtain control of the farm unit, and also, so that he has a reasonable living in the meantime?

This type of information is important. As a vocational agriculture student these matters would be given attention during his years in high school. For example:

- a) through his project work--let us assume the boy has rented 20 acres of cultivated land--his records of profits or losses over the four-year high school period would give him some idea of the income from farming as well as experience in management
- b) if his father used the farm management service, he would have a set of account books analyzed, and would know the financial standing of the farm.

The father-son agreement over this period would give them experience in working together. They would be in a better position to make definite business agreements for the future.

Important, too, if this is done under a vocational agriculture program, a third party, the vocational agriculture instructor, would facilitate the discussion of plans and agreements, and would be acquainted with the student and the farm circumstances.

Vocational Agriculture in High Schools

Despite the above reference to their value, the three members of the survey team were not in complete agreement in proposing that vocational agricultural programs be encouraged in high schools, particularly in schools not adequately equipped to offer a composite educational program. The limitations and advantages of vocational agriculture in high schools have been discussed in Chapter III, which pretty well covers the ground on the subject. It would be unrealistic to suggest that agricultural programs should be introduced in every high school in rural farm communities. The programs would be unsuccessful without the support of local school boards or, as suggested above, without a sufficient size of school, student enrolment and staff to provide for diversity in the teaching of fundamental academic and vocational knowledge. It should be pointed out, however, that vocational agricultural courses in high school have not been fairly tested in Canada. A few provinces, British Columbia and the Prairie Provinces, have tried programs in a scant dozen schools or so, but have not given them proper support and except for a few cases have failed to offer adult training in conjunction with these programs.

In high schools, vocational agricultural courses should attempt to meet the needs of students and farm operators in the local community. Because of its siting in the rural community, the high school is the logical place for the dissemination of local community training requirements, whether they are agricultural or otherwise. The program of vocational agriculture deserves careful attention, particularly in training boys for farming. One argument in favour of vocational training adaptable at the local level is that the future of the community is dependent on the investment in such training.

In establishing vocational training it is well to bear in mind the protection of the academic standing for boys who take the course. This is being done in Minnesota¹⁾ by the establishment of a core of basic subjects that must be taken, in addition to vocational agriculture. The program in Saskatchewan is also established on this basis. The course should be of such a standard that it would enable boys to obtain their Grade XII certificate and also enter the College of Agriculture if so desired. A second course should be established, with the choice of subjects designed for those who will be farmers.

1) See Appendix A, Minnesota Vocational Agricultural Program.

It might be well, at this point, to consider some of the differences between vocational agricultural programs in Canada and those in Minnesota concerning instruction and administration. Most instructors in Canada have been prepared for teaching vocational agriculture by means of academic training--having their degrees in agriculture and some teacher training. The Canadian instructor has had to develop the program for the area. As a result, programs in different schools are not the same. Some do not have programs for adults and they may or may not have facilities for farm shop work. Instruction may also vary because the instructor has difficulty obtaining suitable reference material and text books. The success of the program in Canada is determined to a large extent by the amount of co-operation received from the school principal, the superintendent and the school board.

In contrast, the instructor in Minnesota is trained specifically for his work, along with other vocational agricultural instructors and extension personnel at the State University. Course outlines, lesson materials and reference texts are available, as the program is an accepted part of the educational system. Assistance and guidance for the program is provided by the State supervisor of agricultural education.

The demand for a program should come from local community residents through their school board. Therefore, the first step in the promotion of the program of vocational agriculture should be to get information to local people regarding:

- a) the achievements of programs in the United States and Canada as well as problems encountered
- b) the assistance available under the federal-provincial technical and vocational training agreement for courses in the regular secondary high school and for the training of staff for vocational schools
- c) how to organize a program of vocational agriculture.

Where programs are introduced, the appointment of a provincial supervisor should be made as soon as possible. In addition, it may be desirable to arrange for a regional director, for example one might be appointed for the Prairie region, to help establish the program.

An important requirement for a successful program would be that it should be carried on a 12-month basis to enable instructors to give practical on-farm instruction to the students in carrying out their supervised farming programs.

The establishment of vocational agricultural programs in high schools would take some time, and it is not likely that they will pose a threat to good agricultural schools or agricultural technical institutes. Instead, they should be planned to supplement programs in other institutions and provide training to many who would otherwise not have an opportunity to take this type of training.

Programs in Agricultural Schools

Some of the two-year diploma agricultural schools have operated in Canada since 1913. There are now about 27 or 28 of these schools in Canada and, as indicated in Chapter I, they have an enrolment of around 2,000 students or an average of about 70 per school.

The primary objective of these schools is to give information and training to young men who wish to become future farmers. Young women also receive homemaking courses at some of these institutions. The schools provide instruction for five or six months during the winter and the boys normally return to assist their parents on their own farms during the summer months. In the past, the schools of agriculture have provided a large proportion of vocational agricultural training of a formal, in-residence nature to farm youth in Canada.

The advantages and limitations of these schools have been discussed in Chapter III. Respondents to the survey generally commented favourably on the programs. The principal weakness is that the schools have failed to attract students in larger numbers. Even in Quebec, where there is a greater number of regional schools strategically located in farm areas, recruitment has been generally very unsatisfactory. This lack of interest is particularly striking at the present time when high schools, technical schools and universities are overflowing. In most provinces, a number of instructors in agricultural schools hold degrees; which would indicate that instruction should be of a sufficiently high calibre to attract students.

In addition to a high calibre of instruction, there are other features in a number of these schools which would be difficult to duplicate elsewhere. These include: the use of soils and mechanics' laboratories, more specialized library facilities, 'Little Royal' agricultural fair competitions and, in some cases, an opportunity for broader student and instructor cultural relationships and knowledge.

It is most probable that the trend towards fewer farm operators in Canada, the greatly increased capital requirements and other difficulties involved in getting established in farming, are among the principal factors which have led to a lack of interest in school of agriculture courses. It would seem, therefore, that the time has come for the schools to reorient

their major emphasis from training farm operators, to a program of training agricultural specialists who would be qualified to find employment in providing services to the agricultural industry. If the schools could provide good job-entry qualifications they could probably attract larger numbers of students.

Agricultural schools already established in rural areas, such as those in Quebec, Ontario and Alberta, could continue to offer courses for farm operators, but, in addition, should share some specialized courses among them such as the advanced course in farm mechanics at Kemptville Agricultural School in Ontario. Schools that are located on university campuses should be in a good position to provide training for laboratory technicians and other workers who could assist agricultural professionals, particularly in carrying out scientific research.

In order to raise students' standards to obtain high grade job-entry qualifications immediately upon graduation, it would be necessary to raise the entrance standards to the level of those required by technical institutes, that is, to Grade X to XII levels. Schools which continue to offer the farm operator courses may need to allow some flexibility in entrance requirements at present. However, the lack of uniformity in educational attainment and poor basic academic training have been singled out by critics as the most severe handicaps in these courses; therefore, the schools should strive to raise their entrance requirements to at least Grade X as soon as possible.

In provinces where agricultural services are less important, the number of students trained in specialized courses in the schools of agriculture may be sufficient to meet requirements. In the heavier populated provinces, and perhaps in the Prairie region, it would probably be desirable to establish agricultural technical institutes, as is now being done in Quebec, to meet the increasing demand for agricultural technicians.

Integration of vocational training in agricultural schools with high school and other institutions may not be possible in specialized technical fields in which agricultural school and agricultural technical institute graduates would possess terminal qualifications that could not be imitated in other institutions. In some technical vocations, such as research, however, it may be a fairly simple matter to integrate the curriculum material with university courses so that a student may obtain accreditation towards a degree.

One area of training that deserves some examination in agricultural school programs is whether or not the school term is long enough to cover intensive courses, such as farm management, and whether or not practical summer training should be given. Since most of the schools in Canada have provided training for boys only during the winter months, the question of the extent of vocational training provided becomes relevant. At the Farmingdale Agricultural and Technical Institute in the State of New York, classes are extended over nearly nine months of the year, and first-year boys are required to stay at the campus for practical on-farm work during the summer.

Technical Agricultural Institutes

In addition to the trend towards specialization and mass production in primary agriculture, an increasing population in Canada is now creating a demand for larger numbers of technically trained people to service agriculture in the manufacturing and service industries. For example, the food and beverage manufacturing industries in Canada had nearly 200,000 employees in 1959. Under the heading, "Specialized Needs in Agriculture and Agricultural Industries" in Chapter II, there is a list of specialized technical occupations provided by persons interviewed during this survey. We would emphasize the opinions of survey respondents who expressed the need for agricultural technicians to assist professional agriculturists, many of whom have had to do technicians' work in the past simply because there was no one else available to do this type of work. Technicians are available in other industries but there is a gap at this level in agricultural training.

In deciding to establish two large agricultural technical schools, the Province of Quebec is leading other provinces in this type of training. Although the courses to be offered in these institutions have not been fully outlined as yet, it is probable that they will be similar to those provided at Farmingdale in New York. The one important difference is that Farmingdale and the other five institutes in New York State provide other technical training as well as agricultural, while the Quebec institutes will provide training for agricultural students only.

In providing training at the technical institute level for agriculturists for the first time in Canada, it will probably be necessary for the staff and administrators of these schools to make careful appraisals of job-entry possibilities for their graduates. Relations should be established between the schools and industries to ensure that graduates, particularly the first few classes of students, are placed in work for which they are qualified and which is satisfactory to them. The Farmingdale Institute meets this requirement with a continuing advisory committee which includes consultants from industrial firms.

As the type of technician required to serve different agricultural industries varies considerably in Canada, each province will have to plan for suitable training to meet their needs. There would probably be a very great advantage in having one or two agricultural technicians trained in specialties that particularly suit them to work in a given area, either on the staff of agricultural representatives or co-operating with them closely in providing extension services. Although agricultural representative service is a matter for provincial decision, the present ratio of one representative to about 1,000 farm operators, on an average in Canada, appears to be a limiting factor to extension services.

Farm Facilities for Schools of Agriculture and Technical Institutes

How farm facilities should be used in conjunction with academic agricultural training would seem to be an important question. Would it not be true to say that in most areas in Canada where farming is being carried on successfully today, there are individual farmers who run their businesses better than agricultural schools do so far as actual farm practices are concerned? In addition, the question of how much use is being made of farms is relevant to schools which only offer winter courses to students.

One of our respondents suggested that vocational courses designed for boys destined for a life on the farm require the facilities of an actual farm, not an experimental farm or research station. Several other respondents said that schools should offer training on a 12-month basis. It was also suggested that instructors trained only for research or in university methods of teaching should definitely not be utilized in practical farm instruction work.

In view of these comments, it would seem important for individual provinces to make an assessment of the use of school farms and to try to provide more effective practical training with these facilities.

New Programs and Changes Required for Adults

Training and Vocation Guidance

Assuming we are concerned with adults who have chosen to remain on farms, it seems necessary to make some division between young and older people in recommending vocational training programs. It has been suggested by some survey respondents that younger farm adults of about 21 to 30 years, who are unmarried and not yet taking over responsibilities of their own farms, are not sufficiently interested in agricultural courses. This may be due, in part, to a lack of programs which suit the special needs of younger adults. Those who have a longer lifetime remaining can participate in more intensive and specialized training than older people, and it would seem that there is good reason to plan some separate programs for them. We would approve the recommendation made by one survey respondent, that a special high school course in farm management be offered for young farmers who have graduated from high school. This could be given in the winter months. Similarly, as young men obtain farm credit to get established in farming, credit and loan agencies should encourage and even exert some pressure on them to study farm management and to join farm management clubs.

For older persons who are making a success of farming or could be successful with further training, short courses, adult education and extension assistance should be provided. These programs will be discussed in more detail below. For those who are not making a success of farming, extension workers and others should provide guidance which would help farm people to choose a different vocation for which they are most suited. To do this most effectively it would be necessary to gain the confidence of farm adults and be quite frank in advising them. Many of these people may be able to find off-farm employment on a part-time basis and continue to operate their farms, but with a lessened degree of dependence on farm revenue alone.

Short Courses and Other Extension Training

When the survey team was conducting a group interview with agricultural representatives in Saskatchewan, a verbal exchange occurred between two of the representatives which seems very apropos to this question of extension training. One person said that, "Farm people should be given the type of training they want." The other person said, "No! They should be given the training they need." Probably the best extension program might be one that weighed both of these philosophies and used good diplomacy in keeping a fine balance between them.

Survey respondents' opinions on short courses have been dealt with fairly extensively in Chapter III. Their opinions generally reflected a concern for the training needs of adults who are now operating farms, and a frank recognition that these people should have had more intensive training at an earlier stage in their lives. The degree of success of short courses depends on the following conditions:

- 1) The subjects taught and the way the program is organized. As already stated, it is important that these courses be established both in accordance with needs of farmers and their relative interests in subjects. The courses organized at Cayuga, Ontario, provide a good example of a successful program.
- 2) The time of year when courses are given. Winter and early spring are convenient and popular times for farm people.
- 3) The number of courses included in a series and the number of days per course. When courses are given during the day in an institution which has a dormitory, two-week courses have proven very satisfactory. When courses are given at night, a series of ten courses at the rate of one or two a week, ending no later than ten o'clock, have proven to be satisfactory. It is usually not possible to reduce these courses to less than four or five periods; they will require two or three days or four or five nights, if it is hoped to cover the subject material thoroughly.

- 4) Student participation. The farm forum method of setting up broadcasts, which are given as take-off points to lead individual forums into discussion, have proven to be efficient. Other beforehand demonstrations in shop work are effective as well. The laboratory work in courses is important for good student participation.
- 5) Available space. The facilities of agricultural schools and of public schools (preferably high schools with lab facilities) should be used wherever possible.
- 6) Student incentives and the cost of courses. Several of our respondents have pointed out that people who are required to pay a portion of the cost of training have a greater incentive to take and complete courses. The subject of course fees and costs was not probed very deeply by the survey team. Probably the ability of people in a given area to pay for courses would be a matter for consideration.

In the case of courses that require travelling some distance and a stay of several weeks away from home, the expenses should be as low as possible.

- 7) The personality of the instructor. The courses must be well prepared and given by an instructor trained for the purpose. Training in extension methods has been adequately dealt with in other parts of this report. Instructors should be dynamic and, as one respondent stated, should 'take-well' with people.

As far as specific kinds of courses are concerned, the needs for these vary so greatly from one area to another, and also over the course of time, that, with the exception of the need for more farm management training, it seems not particularly important to mention specific courses. In any case, some of these have been recommended by survey respondents and are already listed in other parts of this report. As suggested by one of our respondents, it may be a good principle to develop area extension councils to help in determining programs that are most suitable. However, another respondent to our survey suggested that there is a danger in this approach because he believed that, "One of the greatest limitations of all programs is that very often it is difficult for people to recognize their own problems." (The reader will note that we are now back to the philosophical point where we began our discussion on short courses.) The above short-coming, however, could probably be avoided by ensuring that area extension councils were affiliated with and met to review their programs from time to time with provincial and national organizations interested in training.

Perhaps the greatest need in providing better agricultural training is for more specialized leadership than is available at present. Farm enterprises and secondary agricultural-oriented industries have been moving towards a much greater degree of specialization and respondents to our survey were concerned about the gap in instruction to meet new needs. As noted in Chapter IV, respondents recommended that agricultural instructors should have a superior knowledge in one or more vocational subjects to enable them to attract students for training purposes. The concern of these respondents probably stems from the fact that, although quite a number of extension workers hold an agricultural degree, most of them have a general agricultural education without specialized qualifications.

Before leaving this section on short courses we would suggest that extension workers should examine the farm management training program for adults which is given in the vocational agricultural program in Minnesota high schools. The program is outlined briefly in Appendix A.

In developing programs of vocational agriculture, consideration should be given to the possibility of developing and orienting these programs with adult education, making use of the facilities of the composite school or other suitable institutions. In farm communities, such programs should be developed in close co-operation with provincial departments of agriculture.

New Programs for Instructors

There is a need for a program of training for agricultural extension and agricultural education personnel at one or two strategically-located universities in Canada. This could include those engaged in extension teaching and related fields, government employees, commercial firms, etc.

The type of training required is beyond the agricultural subject matter received for a bachelor's degree in agriculture. This would include training in program planning, methods of teaching, adult learning processes, rural sociology, extension philosophy, psychology, etc. This type of training should not only help prepare the men for their vocations, but should provide continuing and advanced courses.

Some of these courses would also be of value to other group leaders such as 4-H leaders who serve rural people.

Once these programs became organized in one or two universities the next logical step would be to have them conduct research on existing educational and extension methods and procedures, in an effort to assess and continually improve program methods. There appears to be a necessity to establish future programs on the basis of research, which would probe both the need for programs and the types of programs to be established.

Co-ordination of Training and Reappraisal of Needs

Except for financial and certain quality standards, such as the length and content of vocational training courses, most of the co-ordination required between different educational agencies devolves on provincial departments of agriculture, education and labour. In the Province of Quebec, the Department of Youth is also involved in the administration of vocational training.

At the interprovincial level, co-ordination of programs, particularly of those providing higher skill qualifications, would be an advantage as far as the mobility of agricultural labour is concerned. Co-operation in training programs could provide mutual advantages to provinces.

As for training policy, co-ordination can be thought of in more than one sense. Co-ordination is necessary between different governmental departments, farm and professional agriculturist associations and teachers associations, to carry out the administrative function of training. Co-ordination is also necessary to ensure that training programs are not duplicated but follow one another in proper sequence so that young people can progress through different programs with the necessary accreditation and integration between courses. Because of increasing competition and complexity in farm enterprises as in other industries today, it is more necessary than ever before to co-ordinate the training programs which will eventually qualify a young man to farm or to take up a life's vocation related to agriculture. The first type of co-ordination, that is, the administrative function, should avoid getting so bogged down in details as to lose grasp of the essentials necessary to make all the programs effective.

This study was oriented towards the types of training required to best meet requirements rather than administrative methods in carrying out programs. However, in meeting with the various groups and individuals interviewed across Canada, the survey team became aware of the admitted need for people--even those within the same province--to meet more often in regard to education and training. A subject that requires a great deal of sound thinking and discussion is this whole area of the co-ordination of general or fundamental academic training with vocational and professional training at various levels. In regard to agricultural training, the particular areas to be handled jointly or separately by departments of agriculture, education and others need to be continually threshed out and given decisive administrative approval.

We have suggested above that there is a need for a program of training for agricultural extension and agricultural education personnel at one or two universities in Canada. We would also endorse the suggestion, made by one of our survey respondents, that a special university faculty of this type should also include a research team to probe into the merits of programs in agricultural education and to aid in developing new programs. These faculties could provide much of the leadership that is required for better co-ordination of agricultural education.

One of the first requirements for a continuing reappraisal of training programs would seem to be a further assessment and an early recognition of technological, economic and other trends. It follows, of course, that once required changes in training are clearly recognized, adjustments in programs should be made. To recognize the need for adjustments and to make them are, however, two different things. For example, although Canadians who have been active in agricultural education have recognized the inadequacies of teacher training and program supervisors for vocational education and extension work, little has been done up to the present to improve training in this area. A continuous appraisal of agricultural and other education, which could be undertaken by a research team in one or more universities as suggested above, would be able to point up the needs for improvement or adjustment in training programs. This approach would have obvious advantages over intermittent surveys which can only attempt to catch up to training needs at a given time.

We need more statistical information on the emergence of new skills required in farming, for example. Although primary agriculture was one of the first occupations historically in Canada, there is as yet no precise cataloguing of the types of skill that farm workers possess. Yet farming has become much more technical and it is clear that it will become even more specialized and technical in the future.

APPENDIX A

PROGRAMS IN THE UNITED STATES

Minnesota Vocational Agricultural Program

Background

The program of interest to the survey team in Minnesota was the vocational agricultural high school program. In a two-day visit to Minneapolis, the survey team met with Dr. Milo J. Peterson, Head of the Department of Agricultural Education, at the University of Minnesota, and with several other professors in Dr. Peterson's Department. The team also visited the Forest Lake area high school, about thirty miles north of St. Paul and had an interview with Lee Sandager, an agricultural instructor, who conducted a short tour through the school plant and explained the vocational agricultural program there.

Vocational agriculture is now being taught in about 300 high schools in Minnesota. It is a four-year program, beginning in Grade IX and extending to the end of Grade XII.

It is not a terminal type of education. Dr. Peterson gave us to understand that all vocational students taking agriculture or any other type of vocational course in Minnesota must fulfil a comprehensive course of study which includes compulsory subjects in English, social studies, mathematics, science and physical education. Therefore, students who have taken the vocational agricultural course can fulfil requirements for university entrance upon graduation from high school.

The vocational agricultural program was begun in Minnesota in the public schools, but in 1912 the program was instituted in high schools. In 1917, the Federal Government authorized financial support under the Smith-Hughes Act. This support gradually increased over the years with the passage of additional enabling legislation.

In addition to teaching vocational agriculture to students, high school agricultural instructors have, since 1953, taught farm management to adult farm operators in their districts. This program includes classes for adults of three or more years in duration. The farmer agrees to keep a complete set of records on a calendar year basis in the Minnesota Farm Account Book. He pays a fee of about \$20 to cover part of the cost of analysis of his record at the end of the year. The agricultural teacher helps the farm operator to start his account book and, during the first year, visits the farmer about once a month to check over his records. In the second and third years on-farm visits are maintained but are not normally

required to be as numerous as during the first year. At the end of each year, the account books are closed and submitted to a regional analysis centre, usually an area vocational school, for analysis. This analysis, containing information necessary to sound farm planning, is returned to the farm operator. Farm management is taught to adults mostly in the afternoons, in winter, when other activities are at a low ebb. While dealing with the subject of farm management, it should be mentioned that the vocational agriculture high school course also provides for a systematic four-year farm management course, with a detailed teachers' instructional guide to follow for each year of instruction. The teachers' guides to this course indicate that it is sufficiently technical to provide the student with a sound degree of farm management skill with which to operate his own farm if he chooses to do so after graduation from high school.

In addition to farm management, vocational agricultural instruction includes courses in general agriculture, animal nutrition, crop culture, farm welding, plumbing and sheet-metal work, electricity and carpentry.

The basic philosophy of the need for vocational agricultural teaching in high schools in Minnesota is that the public school is the most important educational bulwark in the community and, while it must function to serve all the people in the community, in those areas where agriculture is important, the school must provide an opportunity for agricultural education. In Dr. Peterson's words, "The school must be a part of the community, not apart from the community."

Administration

The program is administered under the State Board for Vocational Education, with a State Supervisor of Agricultural Education at its head. The initiative to have a vocational agricultural course must begin with the local high school which plans vocational programs in accordance with the needs of the community. The State can approve or not of the vocational agricultural program offered by each high school.

Agricultural instructors have qualified for the agricultural degree and receive teacher training courses from the Department of Agricultural Education at the University of Minnesota before they begin teaching in high schools. Quite a large number of the instructors have reached the M.A. level, and salary increases provide an incentive for them to obtain even higher standards.

The Department of Agricultural Education at the university level has no administrative connection with the vocational agriculture program in high schools other than to serve as a teaching centre for the agricultural instructors. The university can and does, however, supply the professional teaching services for special courses requested by vocational agricultural departments from time to time.

When a school in Minnesota is approved for a vocational agriculture program, it is assumed that the school will also assume responsibility for offering adult education for farmers and out-of-school youth. In 1960, of 287 schools with approved vocational agriculture departments, 255, or 88 per cent, conducted evening or adult programs, and 97, or 33 per cent, conducted programs for out-of-school youth.

Scale of the Program

	<u>1950</u>	<u>1960</u>
<u>Number of departments</u>	168	284
High school enrolment	8,276	13,574
Young farmer enrolment	1,272	1,587
Adult enrolment	<u>3,148</u>	<u>12,468</u>
Total enrolment	12,696	27,629

In 1961, the number of high schools teaching vocational agriculture increased to 298. Dr. Peterson claims that even more are needed and that there should be 350 to 400 schools in operation.

The Program at Forest Lake High School

Courses in vocational agriculture are offered for students in Grades IX - XII. Students taking agriculture in Grades X - XII are required to carry on a farm project. In Grades IX - XI, students taking agriculture receive only one credit for the course each year, but in Grade XII, students taking agriculture can receive two credits. It would appear, therefore, that students can wait until Grade XII before deciding to embark in vocational agriculture in a more serious manner.

In Grades IX and X, students receive agricultural instruction in a more general manner, covering some fundamentals on farm management, livestock care and feeding, soils, grain crops, fruits and vegetables, etc., with one third of the agricultural course time devoted to farm mechanics work in Grade X.

In Grade XI, the emphasis is more on farm management, and students learn how to keep farm records and how to treat these records for analyses. At the same time, they work on practical lessons in livestock and crop management, and one fifth of their agricultural course time is spent on the construction and repair of farm equipment.

In Grade XII, students have an opportunity to become acquainted with the problems of starting farming in their farm management course. They receive instructions in farm credit, farm appraisal, adopting proper crop and livestock programs and farm commodity marketing. In addition, greater emphasis is placed on livestock diseases, weed control, soil management and crop and livestock breeding. As in Grade XI, students also spend one fifth of their course time on the construction and repair of farm equipment. The additional credit which may be earned in Grade XII may be taken in a farm mechanics course. Two types of courses are taught in alternate years. The first is a course in the care, operation and adjustment of farm power, machinery and electrical equipment, while the second course deals with soil and water management, farm buildings, farm water supply and sewage systems. In this second course students are also given advanced arc and acetylene welding training.

In the 1960-61 class year, Forest Lake High School had 600 students in all grades from VII to XII. There were 65 vocational agricultural students in Grades IX - XII.

New York Agricultural and Technical Institute Program

Background

There are six State university schools offering agricultural and other technical training in the State of New York. These institutes provide a two-year college course to students who want more than twelve years of schooling but less than sixteen. These students are provided with the necessary skills with which to earn a living and to obtain their first entry job in the labor market.

The survey team visited the Agricultural and Technical Institute at Farmingdale, New York. Other schools are located at: Alfred, Canton, Cobleskill, Delhi, and Morrisville. At Farmingdale, the survey team interviewed Mr. Norman H. Foote, Chairman of the Division of Agriculture and Ornamental Horticulture. Mr. Foote introduced the team to the Dean of the school, Mr. David W. Allee, and other professors. Mr. Foote also conducted the team on a tour around the school, the school farm and on a visit of two privately-operated farms on Long Island.

These agricultural institutes were established in New York State about fifty years ago. The school at Farmingdale was established as the New York State School of Agriculture in 1912. In 1920, the name of the school was changed to the State Institute of Applied Agriculture; this was later changed to the State Institute of Agriculture. With the addition of other industrial programs besides agriculture in 1946, it has been necessary to change the name of the school again and today it is called the Agricultural and Technical Institute.

Mr. Foote said he thought it was a good thing to have the agricultural and non-agricultural students together on the same campus. Non-agricultural students have shown a lively interest in participating in agricultural activities, such as cattle clubs and livestock judging on the campus, and in the general courses, such as mathematics, English and political science, the school administration intentionally mixes agricultural and non-agricultural students together.

During the 1930's the school at Farmingdale developed a three-year program for students who had not completed high school before coming to the Institute, but since the 1940's, the school has taken high school graduates only and has taught only a two-year course. At different times, the school has also offered shorter specialized courses in poultry, horticulture and general agriculture.

Administration

In 1948, the institutes became part of the State University of New York, which has over forty institutions connected with it.

The function of the agricultural and technical institutes is to make available to the student a well-rounded education which will qualify him upon graduation for employment at the technical level in the field in which he is interested. Mr. Foote stated that most of the graduates from Farmingdale get work immediately and are able to cope with their first entry jobs.

The six agricultural and technical institutes do not necessarily offer the same courses. As far as agriculture is concerned, however, Farmingdale offers all courses taught in the other institutes except agriculture business, which is taught only at Alfred and Cobleskill.

Tuition for all courses taught in the agricultural and technical institutes is free to persons who have been residents of New York for one year. For out-of-state residents, the tuition charge is \$300 per year.

The State College of Agriculture at Cornell is the main training centre for teachers on staff at the agricultural and technical institutes. As a matter of fact, Mr. Foote stated that Cornell was also the main training ground for: 4-H Club agents, county agricultural agents, agricultural extension specialists and research people. Farmingdale, however, also follows the practice of hiring professors from other colleges so as not to become too inbred.

Mr. Foote said that there is some pressure on agricultural teachers to get additional training over the Bachelor's degree. Encouragement is offered them by way of increased salaries.

Scale of the Program

Enrolment, Fall of 1961

Alfred	1,401
Canton	601
Cobleskill	648
Delhi	518
Farmingdale	1,677
Morrisville	835

In agricultural courses at Farmingdale, there was a total of 337 students. Mr. Foote said that one of the other five institutes was nearly as large as Farmingdale in enrolment, but the rest were considerably smaller.

It should be noted that these institutes are co-educational, offering courses for girls as well as boys. The enrolment of girls at Farmingdale in 1960-61 was about 400.

The Agricultural Program at Farmingdale

Farmingdale at present offers 25 different two-year degree programs. These are regular day programs for students, leading to the degree of Associate in Applied Science. In addition, this Institute offers evening and extension courses for adult men and women.

In agriculture, students are offered 10 different technical courses in the division of agriculture and ornamental horticulture. These are as follows:

Agricultural production technology -

- Agronomy
- Animal science
- Poultry science

Agricultural service technology -

- Agricultural equipment
- Dairy industry
- Frozen foods

Ornamental horticulture -

- Biological technology
- Floriculture
- Landscape
- Nursery

Farmingdale actually has a slightly higher number of students taking horticulture at present than they have in other agricultural classes.

To be admitted to the Farmingdale Institute, students must be graduates of approved four-year high schools and must have at least 16 units of high school credits. The agricultural and horticultural programs require entering students to have at least two units in mathematics and two in science, preferably biology and chemistry.

The Institute campus comprises 380 acres and includes a farm for agricultural instruction purposes. It also operates a 750 acre farm at Beacon, New York, and a 409 acre estate at Oyster Bay, New York, both of which are used for instruction purposes. At Farmingdale campus, there is accommodation for 600 resident students and as many as can be accommodated are encouraged to live on the campus. The remainder commute from homes and boarding houses off the campus.

Because the institution serves a metropolitan city area, only 15 to 20 per cent of the boys taking agriculture at Farmingdale originate from farms. On the other hand, surveys of employment occupations of former agricultural students reveal that about 77 per cent of them are either on farms or in related fields to agriculture after graduation. Mr. Foote claims that, "The Institute develops the type of person who is willing to take his shirt off and go to work."

Classes in agriculture begin in the first week in September and are divided into three 12-week quarters, ending about the second week in June. During the first summer, first-year boys are required to stay at the campus for practical on-farm work, or else to have an approved agricultural job off the campus. After a second year of classes, the students graduate and are not required to maintain a practical summer program. In summary, the student receives a total of six 12-week class quarters in his two years, plus practical on-farm training during his first summer.

Mr. Foote says that the agricultural program actually works out about as follows:

"One third of the pupil's time is spent on general courses such as mathematics, English and political science. One third of the time is spent on his specific vocation. The remaining third of the time is spent in relating general courses to the specific vocation."

The evening and extension courses for adults, mentioned above, are given on a self-supporting basis. In other words, persons taking these courses must pay the cost of them. The Farmingdale Institute also derives income from its farm crops and livestock products, particularly dairy products and eggs, which are used to help towards the cost of the regular

student program. In its evening and extension division the Institute provides non-degree and college level classes designed to meet business, industrial, agricultural and horticultural needs on Long Island. One of the programs that will be offered beginning last fall is a degree program entitled "An Associate in Applied Science Degree in Police Science". This illustrates the extensive variety of courses provided by the Institute.

The Farmingdale Institute has a comprehensive set of advisory committees which are served by members who are leaders in their respective fields. These people serve as permanent consultants and advise the various departments of the Institute in order that it may keep its training programs up to date.

Students who take the regular two-year Associate Degree in Applied Science at Farmingdale, and subsequently decide to take a four-year degree course in agriculture at Cornell or some other university, can obtain one year's credit towards the degree. Exceptionally well-qualified students have also obtained a two-year credit towards their degree. The Institute clearly states in its brochures, however, that the Institute education is not intended to serve as a bridge to the second half of a four-year college education.

APPENDIX B

THE NEEDS FOR AGRICULTURAL TRAINING IN CANADA

Interviewing Schedule

NAME.....

OCCUPATION.....

ADDRESS..... PROVINCE.....

I. What, in your opinion, are the most important changes in agriculture in your area (or province) during the past ten to fifteen years?

1. Size of farm

2. Type of farming

3. Methods of farming

4. Capital needs

5. Use of credit

6. Mechanization

7. Costs of production

8. Marketing

9. Other

II. In view of these changes, what kinds of knowledge and skills are becoming more and more important?

(check) if important

(double check) if most important

Subjects	Youth		Adults	
	Boys	Girls	Men	Women
1. <u>Rural Sociology</u>				
a) knowledge of community				
b) rural leadership				
c) recreation				
d) other				
2. <u>Farm Management</u>				
a) business organization				
b) farm operation				
c) use of capital				
d) other				

Subjects	Youth		Adults	
	Boys	Girls	Men	Women
3. <u>Crop Production</u>				
a) choice of crops				
b) production techniques				
c) storage on farm				
d) other				
4. <u>Animal Husbandry</u>				
a) breeding				
b) feeding				
c) prevention and control of disease				
d) other				
5. <u>Agricultural Engineering</u>				
a) buildings				
b) machinery				
c) equipment				
d) other				
6. <u>Soils</u>				
a) land use				
b) drainage				
c) irrigation				
d) other				

Subjects	Youth		Adults	
	Boys	Girls	Men	Women
7. <u>Marketing</u>				
a) marketing services				
b) storage and transportation				
c) processing of products for market				
d) other				
8. <u>Household Science</u>				
a) cooking				
b) sewing				
c) home management				
d) other				
9. <u>First Aid</u>				
10. <u>Other</u>				

III. A. What kinds of training programs presently taking place in your area meet these needs most effectively?

Place check in proper space. If program is not in operation in your area please write "nil".

Institutions and Clubs	TYPE OF TRAINING					
	YOUTH			ADULTS		
	General	Special	Practical Method	General	Special	Practical Method
1. High School						
2. School of Agriculture						
3. Short Courses						
4. Vocational Agriculture (HS)						
5. Correspondence Courses						
6. Homemakers' Clubs						
7. 4-H Clubs						
8. Junior Farmers' Clubs						
9. Others						

If a program is shown as "nil", explain.

III. A. (Cont'd)

(a) Why are they most effective?

(b) What are their limitations?

IV. What other types of training programs should be developed to meet the present and future training needs?

(a) of young people:

(b) of adults:

(c) of instructors:

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